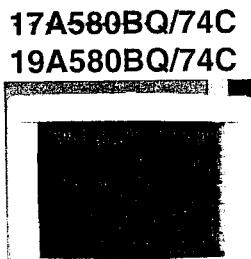


Service Service Service



17A580BQ/74C
19A580BQ/74C

MANUAL 6604
PCEC Model: 17A580 BQ11
19A580 BQ11
Chassis: CM5800
File: 1997: 6604

DDC/Audio/Power saving/Tilt correction

Service Manual

Horizontal frequencies
30 - 95 kHz

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REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.



PHILIPS

Proper service and repair is important to the safe, reliable operation of all Philips Consumer Electronics Company** Equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

*** * Hereafter throughout this manual, Philips Consumer Electronics Company will be referred to as Philips.**

WARNING

Critical components having special safety characteristics are identified with a ▲ by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol ▲ on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

* Broken Line

FOR PRODUCTS CONTAINING LASEB:

DANGER- Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM

CAUTION- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION: The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Hex Data of DDC1/2B (17A580BQ/74C)

17A CM5800

3

ddc_v17.chk		Aspect Ratio : 5:4 Refresh Rate : 85
Standard Timing Identification #5		Horizontal active pixels : 1600 Aspect Ratio : 4:3 Refresh Rate : 75
Detailed Timing #1		Pixel Clock (MHz) : 108.000 H Active (pixels) : 1152 H Blanking (pixels) : 352 V Active (lines) : 900 V Blanking (lines) : 43 H Sync Offset (F Porch) (pixels) : 16 H Sync Pulse Width (pixels) : 64 V Sync Offset (F Porch) (lines) : 2 V Sync Pulse Width (lines) : 8 H Image Size (mm) : 300 V Image Size (mm) : 225 H Border (pixels) : 0 V Border (lines) : 0 Flags : Non-interlaced Normal Display, No stereo Digital Separate Sync Positive V Sync Positive H Sync
Basic Display Parameters/Features		Monitor Descriptor #2 Serial Number : CM58C12345678
Video Input Definition		Monitor Descriptor #3 Monitor Name : TYPHOON 17A
ID Manufacturer Name : PHL ID Product Code : 1107 ID Serial Number : 12345678 Week of Manufacture : 38 Year of Manufacture : 1997		Color Characteristics Red X coordinate : 0.625 Red Y coordinate : 0.340 Green X coordinate : 0.285 Green Y coordinate : 0.605 Blue X coordinate : 0.150 Blue Y coordinate : 0.065 White X coordinate : 0.283 White Y coordinate : 0.298
EDID Version, Revision		Established Timings Established Timings I : 640 x 480 @60Hz (VGA,IBM) 640 x 480 @75Hz (VESA)
Version : 1 Revision : 1		Established Timings II : 800 x 600 @75Hz (VESA) 1024 x 768 @75Hz (VESA) 1280 x 1024 @75Hz (VESA)
Maximum H Image Size : 30 cm Maximum V Image Size : 23 cm		Manufacturer's timings : 1152 x 870 @75Hz (MacII, Apple)
Display Transfer Characteristic: 2.850 (gamma)		Standard Timing Identification #1 Horizontal active pixels : 640 Aspect Ratio : 4:3 Refresh Rate : 70
Feature Support (DPMS)		Standard Timing Identification #2 Horizontal active pixels : 800 Aspect Ratio : 4:3 Refresh Rate : 85
Standby Suspend Active Off RGB color display		Standard Timing Identification #3 Horizontal active pixels : 1024 Aspect Ratio : 4:3 Refresh Rate : 85
Color Characteristics		Standard Timing Identification #4 Horizontal active pixels : 1280
Red X coordinate : 0.625 Red Y coordinate : 0.340 Green X coordinate : 0.285 Green Y coordinate : 0.605 Blue X coordinate : 0.150 Blue Y coordinate : 0.065 White X coordinate : 0.283 White Y coordinate : 0.298		Monitor Descriptor #4 Min. Vt rate Hz : 50 Max. Vt rate Hz : 160 Min. Horiz. rate kHz : 30 Min. Horiz. rate kHz : 95 Max. Supported Pixel not specified
Established Timings		Extension Flag : 0
Established Timings I : 640 x 480 @60Hz (VGA,IBM) 640 x 480 @75Hz (VESA)		Check sum : 5e(hex)
Established Timings II : 800 x 600 @75Hz (VESA) 1024 x 768 @75Hz (VESA) 1280 x 1024 @75Hz (VESA)		
Manufacturer's timings : 1152 x 870 @75Hz (MacII, Apple)		
Standard Timing Identification #1 Horizontal active pixels : 640 Aspect Ratio : 4:3 Refresh Rate : 70		
Standard Timing Identification #2 Horizontal active pixels : 800 Aspect Ratio : 4:3 Refresh Rate : 85		
Standard Timing Identification #3 Horizontal active pixels : 1024 Aspect Ratio : 4:3 Refresh Rate : 85		
Standard Timing Identification #4 Horizontal active pixels : 1280		

0: 0	1: ff	2: ff	3: ff	4: ff	5: ff	6: ff	7: 0
8: 41	9: c	10: 7	11: 11	12: 4e	13: 61	14: bc	15: 0
16: 26	17: 7	18: 1	19: 1	20: e	21: 1e	22: 17	23: b9
24: e8	25: 0	26: b9	27: a0	28: 57	29: 49	30: 9b	31: 26
32: 10	33: 48	34: 4c	35: 24	36: 43	37: 80	38: 31	39: 4a
40: 45	41: 59	42: 61	43: 59	44: 81	45: 99	46: a9	47: 4f
48: 1	49: 1	50: 1	51: 1	52: 1	53: 1	54: 30	55: 2a
56: 80	57: 60	58: 41	59: 84	60: 2b	61: 30	62: 10	63: 40
64: 28	65: 0	66: 2c	67: e1	68: 10	69: 0	70: 0	71: 1e
72: 0	73: 0	74: 0	75: ff	76: 0	77: 43	78: 4d	79: 35
80: 38	81: 43	82: 31	83: 32	84: 33	85: 34	86: 35	87: 36
88: 37	89: 38	90: 0	91: 0	92: 0	93: fc	94: 0	95: 54
96: 59	97: 50	98: 48	99: 4f	100: 4f	101: 4e	102: 20	103: 31
104: 37	105: 41	106: a	107: 20	108: 0	109: 0	110: 0	111: fd
112: 0	113: 32	114: a0	115: 1e	116: 5f	117: ff	118: 0	119: a
120: 20	121: 20	122: 20	123: 20	124: 20	125: 20	126: 0	127: 5e

Display data channel :DDC1/2B		Standard Timing Identification #3
ID Manufacturer Name	: PHL	Horizontal active pixels : 1280
ID Product Code	: 1109	Aspect Ratio : 5:4
ID Serial Number	: 12345678	Refresh Rate : 85
Vendor/Product Identification		Standard Timing Identification #4
Week of Manufacture	: 36	Horizontal active pixels : 1600
Year of Manufacture	: 1997	Aspect Ratio : 4:3
EDID Version, Revision		Refresh Rate : 75
Version	: 1	Detailed Timing #1
Revision	: 1	Pixel Clock (MHz) : 202.500
Basic Display Parameters/Features		H Active (pixels) : 1600
Video Input Definition	: Analog Video Input	H Blanking (pixels) : 560
	: 0.700V/0.300V (1.00Vpp)	V Active (lines) : 1200
	: without Blank-to-Black Setup	V Blanking (lines) : 50
	: Separate Sync	H Sync Offset (F Porch) (pixels) : 304
	: Composite Sync	H Sync Pulse Width (pixels) : 192
	: without Sync on Green	V Sync Offset (F Porch) (lines) : 46
	: no Serration required	V Sync Pulse Width (lines) : 3
Maximum H Image Size	: 34 cm	H Image Size (mm) : 340
Maximum V Image Size	: 25 cm	V Image Size (mm) : 255
Display Transfer Characteristic (gamma)	: 2.760	H Border (pixels) : 0
Feature Support (DPMS)	: Standby Suspend Active Off RGB color display	V Border (lines) : 0
Monitor Descriptor #2		Non-interlaced : Non-interlaced
Serial Number	: 5800C12345678	Normal Display, No stereo : Normal Display, No stereo
Monitor Descriptor #3		Digital Separate Sync : Digital Separate Sync
Monitor Name	: TYPHOON 19A	Positive V Sync : Positive V Sync
Monitor Descriptor #4		Positive H Sync : Positive H Sync
Min. Vt rate Hz	: 50	
Max. Vt rate Hz	: 160	
Min. Horiz. rate kHz	: 30	
Max. Supported Pixel not specified	: 95	
Established Timings	: 640 x 480 @60Hz (VGA,IBM) 640 x 480 @75Hz (VESA)	Extension Flag : 0
Established Timings I		Check sum : 5e(hex)
Established Timings II	: 800 x 600 @75Hz (VESA) 1024 x 768 @75Hz (VESA) 1280 x 1024 @75Hz (VESA)	
Manufacturer's Timings		
	: 1152 x 870 @75Hz (MacII, Apple)	
Standard Timing Identification #1		
Horizontal active pixels	: 800	
Aspect Ratio	: 4:3	
Refresh Rate	: 85	
Standard Timing Identification #2		
Horizontal active pixels	: 1024	
Aspect Ratio	: 4:3	
Refresh Rate	: 85	

For Hitachi CRT

0: 0	1: ff	2: ff	3: ff	4: ff	5: ff	6: ff	7: 0
8: 41	9: c	10: 9	11: 11	12: 4e	13: 61	14: bc	15: 0
16: 24	17: 7	18: 1	19: 1	20: c	21: 22	22: 19	23: b0
24: e8	25: 0	26: b9	27: a0	28: 57	29: 49	30: 9b	31: 26
32: 10	33: 48	34: 4c	35: 24	36: 43	37: 80	38: 45	39: 59
40: 61	41: 59	42: 81	43: 99	44: a9	45: 4f	46: 1	47: 1
48: 1	49: 1	50: 1	51: 1	52: 1	53: 1	54: 1a	55: 4f
56: 40	57: 30	58: 62	59: b0	60: 32	61: 40	62: 30	63: c0
64: e3	65: 48	66: 54	67: ff	68: 10	69: 0	70: 0	71: 1e
72: 0	73: 0	74: 0	75: ff	76: 0	77: 35	78: 38	79: 30
80: 30	81: 43	82: 31	83: 32	84: 33	85: 34	86: 35	87: 36
88: 37	89: 38	90: 0	91: 0	92: 0	93: fc	94: 0	95: 54
96: 59	97: 50	98: 48	99: 4f	100: 4f	101: 4e	102: 20	103: 31
104: 39	105: 41	106: a	107: 20	108: 0	109: 0	110: 0	111: fd
112: 0	113: 32	114: a0	115: 1e	116: 5f	117: ff	118: 0	119: a
120: 20	121: 20	122: 20	123: 20	124: 20	125: 20	126: 0	127: 8e

a: Service DDC Kit

DDC Module (DDC cable), Part number = 4822 320 12004

DDCV2N.EXE software (3.5" disk), Part number = 4822 711 00024

b: Please refer to Service Information 4822 727 21995 for using the Service DDC Kit.

Notes

1. The direct voltages and waveforms are average voltages. They have been measured using the Service test software and under the following conditions :
 - Mode : 1024 * 768 (56.5kHz / 70Hz)
 - Signal pattern : grey scale
 - Adjust brightness and contrast control for the mechanical mid-position (click position)
2. The picture tube panel has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
3. The semiconductors indicated in the circuit diagram(s) and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

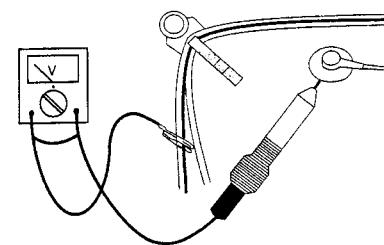


Fig.1

Warnings

1. Safety regulations require that the unit should be returned in its original condition and that components identical to the original components are used. The safety components are indicated by the symbol .
2. In order to prevent damage to ICs and transistors, all high-voltage flash-overs must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0 V (after approximately 30 seconds).
3. ESD .
- All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten their life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the ground of the unit. Keep components and tools also at this same potential.
4. When repairing a unit, always connect it to the AC Power voltage via an isolating transformer.
5. Be careful when taking measurements in the high-voltage section and on the picture tube panel.
6. It is recommended that safety goggles be worn when replacing the picture tube.
7. When making adjustments, use plastic rather than metal tools. This will prevent any short-circuit or the danger of a circuit becoming unstable.
8. Never replace modules or other components while the unit is switched on.
9. Together with the deflection unit, the picture tube is used as an integrated unit. Adjustment of this unit during repair is not recommended.
10. After repair, the wiring should be fastened in place with the cable clamps.

0. General

When carry-out the electrical settings in many cases a video signal must be applied to the monitor. A computer with :

- ATI GPT-1600 (4822 397 10065), Mach 64 (up to 107kHz)

are used as the video signal source. The signal patterns are selected from the "service test software" package, see user guide 4822 727 21046 (GPT-1600).

0.1 This monitor has 12 factory-preset modes as below.

640 x 400	31.5 kHz/70 Hz	1152 x 870	68.7 kHz/75 Hz
640 x 480	31.5 kHz/60 Hz	1152 x 900	71.8 kHz/76 Hz
640 x 480	37.5 kHz/75 Hz	1280 x 1024	80.0 kHz/75 Hz
800 x 600	46.9 kHz/75 Hz	1280 x 1024	91.1 kHz/85 Hz
800 x 600	53.7 kHz/85 Hz	1600 x 1200	93.7 kHz/75 Hz
1024 x 768	60.0 kHz/75 Hz		
1024 x 768	68.7 kHz/85 Hz		

0.2 With normal VGA card:

If not using the ATI card during repair or alignment, The service engineer also can use this service test software adapting with normal standard VGA adaptor and using standard VGA mode 640 x 480, 31.5 kHz/60 Hz (only) as signal source.

0.3 AC/DC Measurement:

The measurements for AC waveform and DC figure is based on 640 x 480 31.5 kHz/60 Hz resolution mode with test pattern "gray scale".

Power input: 110V AC

1. B+ supply voltage (3194) 185Vdc

- Apply a video signal in the 1024 x 768 with 69 kHz/85Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness control and the contrast control to the minimum position.
- Pre-set trimming potentiometer 3194(+) and 3644(EHT) in mid-position.
- Set Vg2 (screen) to fully Counter-clockwise (zero beamcurrent).
- Connect a dc voltmeter between the joint of capacitor 2181 and ground (common ground).
- Set the B+ trimming potentiometer 3194 so that the reading on the dc voltmeter is 185 V +/- 0.5 Vdc.

2. High-voltage EHT (3644)

- Apply a video signal in the 1024 * 768 with 69 kHz/85Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness control and the contrast control to the minimum position.
- Turn off the power.
- Connect a "high-voltage voltmeter" between the high-voltage connection of the picture tube and earth.
- Turn on the power.
- Set the EHT trimming potentiometer 3644 so that the "high-voltage voltmeter" reads 26.0 kV +/- 0.2 kV (for 19"). 25.0 kV +/- 0.2 kV (for 17").
- Turn off the power.
- Remove the "high-voltage voltmeter" from the picture tube.
- Turn on the power again.
- Remove the "high-voltage voltmeter" from the picture tube.
- Turn on the power again.

3. Monitor the following auxiliary voltages.

- + 12.0V SOURCE ACROSS C2192 + 12.0V +/- 0.5VDC.
- + 15.0V SOURCE ACROSS C2187 + 15.0V +/- 1.0VDC.
- 15.0V SOURCE ACROSS C2189 - 15.0V +/- 1.0VDC.
- + 6.3V SOURCE ACROSS D6195+ 6.3V +/- 0.5VDC.
- +125.0V SOURCE ACROSS C2182 +125.0V +/- 2.0VDC.
- +185.0V SOURCE ACROSS C2181 + 185.0V +/- 1.5VDC.
- + 81.0V SOURCE ACROSS C2185 + 81.0V +/- 2.0VDC.

4. General conditions for alignment

- 4.1 During all alignments, supply a distortion free AC mains voltage to set via an isolating transformer with low internal impedance.
- 4.2 Align in pre-warmed condition, at least 30 minutes warm-up with nominal picture brightness.
- 4.3 Purity, geometry and subsequent alignments should be carried out in magnetic cage with correct magnetic field.
- Northern hemisphere : H=0, V=430 mG, Z=0
- Southern hemisphere : H=0, V=-520 mG, Z=0
- Equatorial Support : H=0, V=0 mG, Z=0
- 4.4 All voltages are to be measured or applied with respect to ground.
- Note: Do not use heatsink as ground.**
- 4.5 Adjust function controls "  " to center position except for contrast control which should be set to MAX.
- 4.6 Apply a video signal in the 1280 x 1024 with 64kHz/60Hz mode, select cross hatch pattern, set the Brightness for visible raster, adjust H-size for 340mm (19" monitor)/300mm (17" monitor) "raster width", adjust R3551 for Horizontal raster center.

5. To access factory mode:

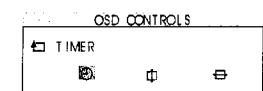
- Turn off monitor (don't turn off PC)
- Press "  " and "  " simultaneously on the front control panel, until the OSD menu with characters "factory mode (below OSD menu)" come on the screen of monitor.
- If OSD menu disappears on the screen of monitor, press "  " again (anytime), then the OSD menu comes on the screen again.
- using "  " to select OSD menu.
- using "  " to increase or decrease the setting.
- (Please also refer to page 4,5,6 and 7 for OSD adjustment)
- Using "  " to confirm the selection.

5.1. To leave factory mode

- * After alignment of factory mode, turn off monitor (if you do not turn off monitor, the OSD menu is always at the factory mode), then turn on monitor again (at this moment, the OSD menu goes back to user mode).

6. OSD CONTROLS (During alignment) 

During alignment, please use the "OSD controls" to keep OSD menu, or to shift OSD menu as below.



 **TIMER** Set OSD display time, select "OFF", then the OSD menu will stay on the screen (won't disappear).

 **VERTICAL POSITION** Move the OSD windows up or down.

 **HORIZONTAL POSITION** Move the OSD window left or right.

7. Alignment of Vg2 cut-off point, white tracking (OSD control)

Equipment : 1. Video Test Generator-801GC (Quantum Data)
2. Color-analyzer (Minolta CA-100)

VG2 [(screen), at the bottom of the L.O.T.]

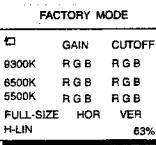
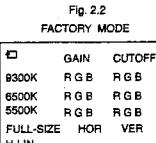
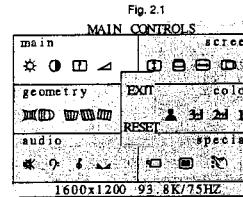
- * Apply a video signal in the 1024 x 768 with 69 kHz/85 Hz mode, select the "full white pattern".
- * Use color-analyzer (Minolta CA-100) to adjust cutoff and white uniformity.

OSD R/G/B cut-off and R/G/B gain can be accessed, with initial data:

- R cutoff = 50%, R gain = 70%
- G cutoff = 50%, G gain = 70%
- B cutoff = 50%, B gain = 70%

Step 1: To select the character "FACTORY MODE" as shown in Fig. 2.1, press "  " to access the OSD menu for R/G/B gain & cutoff as shown in Fig. 2.2.

Step 2: Use "  " to increase or decrease the value as shown in Fig. 2.3.



7.1 Connect the video input, set brightness control at 50% and contrast at minimum position, Vg2 at Minimum (counter clockwise), and ABL (3647, potentiometer) at center position. Slowly increase Vg2 voltage until light output is at 0.17 Ft-L +/- 0.05 Ft-L (Y=0.17 Ft-L, on the screen of CA-100).

7.2 (The screen of monitor is dark now)

- : Press "  " to show the OSD menu as shown in Fig. 2.1.
- : Select the character "FACTORY MODE" to access the R/G/B adjustment as shown in Fig. 2.2 and Fig. 2.3.
- : Adjust the cutoff of R/G/B to get 9300K (x=0.281 +/- 0.015, y=0.311 +/- 0.015), and brightness output at 0.17 +/- 0.05 Ft-L (Y=0.17 Ft-L).

- 7.3 : Press "  " to set contrast at maximum (100%).
- : Adjust gain of R/G/B to get 9300K (x=0.281 +/- 0.015, y=0.311 +/- 0.015, don't care about the Y value)

7.4 Apply a small white square 60 x 60 mm pattern, or 8% fill of full screen, brightness set to center (50%), and contrast at maximum (100%), adjust gain control (OSD) to reach 34 +/- 2 Ft-L.

7.5 : Select the 6500K colour temperature as shown in Fig. 2.2. : Adjust the R/G/B cutoff and R/G/B gain as shown in procedure 7.2-7.4 to get R/G/B cutoff x= 0.313 +/- 0.015 y= 0.329 +/- 0.015 Y= 0.17 +/- 0.05 Ft-L

R/G/B gain x= 0.313 +/- 0.015 y= 0.329 +/- 0.015 Y= 30 +/- 2 Ft-L

7.6 : Select the 5500K colour temperature as shown in Fig. 2.2. : Adjust the R/G/B cutoff & R/G/B gain as procedure 7.2-7.4

to get R/G/B cutoff x= 0.332 +/- 0.015 y= 0.347 +/- 0.015 Y= 0.17 +/- 0.05 Ft-L

R/G/B gain x= 0.332 +/- 0.015 y= 0.347 +/- 0.015 Y= 25 +/- 2 Ft-L

7.7 Apply full white pattern at 9300K, adjust ABL R3647 to reach 31 +/- 2 Ft-L (19") (contrast at maximum, brightness at center). 30 +/- 2 Ft-L (for 17" monitor).

8. Picture geometry setting (factory pre-set modes)

- Apply a video signal with cross-hatch pattern.
- Apply a video signal in the 1024 x 768 with 69 kHz/85 Hz mode.
- Set brightness and contrast controls to their center positions (OSD control).

8.1 Horizontal geometry (OSD control)

- Adjust the H-width to 340 mm (for 19" monitor). 300 mm (for 17" monitor).
- Adjust the H-phase to center position.

8.2 Vertical geometry (OSD control)

- Adjust vertical size to 255 mm (for 19" monitor). 225 mm (for 17" monitor).
- Adjust V-phase to center position.

8.3 Trapezoid distortion (OSD control)

- Adjust the trapezoid to get optimal vertical lines.

8.4 Pincushion (OSD control)

- Adjust the pincushion to get optimal vertical line.

8.5 Parallelogram (OSD control)

- Adjust parallelogram so that vertical lines are vertical or symmetrically about the center vertical axis.

8.6 Unbalance-pin (OSD control)

- Adjust the unbalance-pin so that vertical border lines are aligned symmetrically.

8.7 Rotation (OSD control)

- Adjust picture so that vertical tilt is less than +/- 0.5mm.

8.8 Store the preset results by selecting the "exit" (OSD control).

8.9 Repeat the procedure 8.1 to 8.8 until all the preset timings have been adjusted completely

9. Focus adjustment

- : Apply a video signal in the 1024 x 768 with 69 kHz/85 Hz mode.
- : Select "ME" pattern.
- : Set the brightness at center (50%) and the contrast at maximum (100%).
- : Adjust focus potentiometers (top of L.O.T.) Focus 1 for horizontal focus and Focus 2 for vertical focus so that the picture at 2/3 of the diagonal lines (from center to four corners) of the displayed screen is as sharp as possible.

10. Loading DDC code

The DDC HEX data should be written into the DDC IC (7331) by EEPROM writer or equivalent method.

a: Service DDC Kit

DDC Module (DDC cable), Part number = 4822 320 12004

DDCV2N.EXE software (3.5" disk), Part number = 4822 711 0004

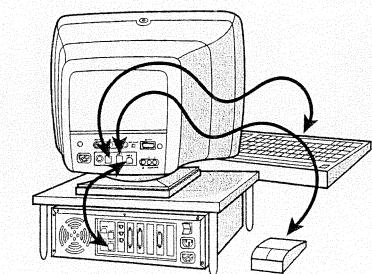
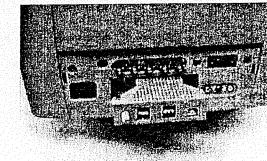
b: Please refer to Service information 4822 727 21995 for using the Service DDC Kit.

USB Connections

If you have Windows '95...

follow these steps to complete setting up your monitor.

1. Start Windows '95 and install CD ROM supplied with this monitor.
2. Click on the "START" icon. Next, click on the "SETTINGS" icon. Then click on "CONTROL PANEL."
3. Double-click on "DISPLAY" icon. Next, click on "SETTINGS" tab. Then click on "ADVANCED PROPERTIES" dialog box.
4. Click on "MONITOR" tab.
- 5.(a) If you have an old computer, click on "CHANGE" dialog box. Next, "SELECT DEVICE" screen appears. Now click on "HAVE DISK" dialog box, and select CD-ROM drive
Or
- 5.(b) If you have a new computer, "SELECT DEVICE" screen automatically appears. Click on "HAVE DISK" dialog box and select CD-ROM drive.
6. Select "OK" in the "INSTALL FROM DISK" dialog box. If model name of the Philips monitor is correct, click "OK" tab in the "SELECT DEVICE" dialog box.
7. Click "CLOSE" tab in the "ADVANCED PROPERTIES" dialog box. If your Windows '95 version is different or you need more detailed installation information, please refer to the windows '95 user's manual. **For additional information on the monitor, please refer to the owner's manual.**



USB CONNECTIONS

USB (Universal Serial Bus) is an innovation in connecting your IBM-compatible computer to your monitor. By using the USB, you will be able to connect your keyboard, mouse, printer, and other peripherals to your monitor instead of having to connect them to your computer. This will give you greater flexibility in setting up your system. Plus, you will have true plug-and-play capability. While the software is still being developed, Philips has included the hardware so you will be ready to take advantage of this next generation in computer development.

For an IBM-compatible Computer:

1. Turn off the computer.
2. Connect the (optional) USB Hub and cable to the computer and to the monitor. (Computer must have USB port.)
3. Connect the power cable.
4. Turn on the monitor. Then turn on the computer.
5. With the installation of the correct software, you will be able to connect specially-made peripherals to the monitor.

Note : USB Hub and cables sold separately. USB Bay exists in back of monitor.

Use the information file (philips.inf) for Windows '95

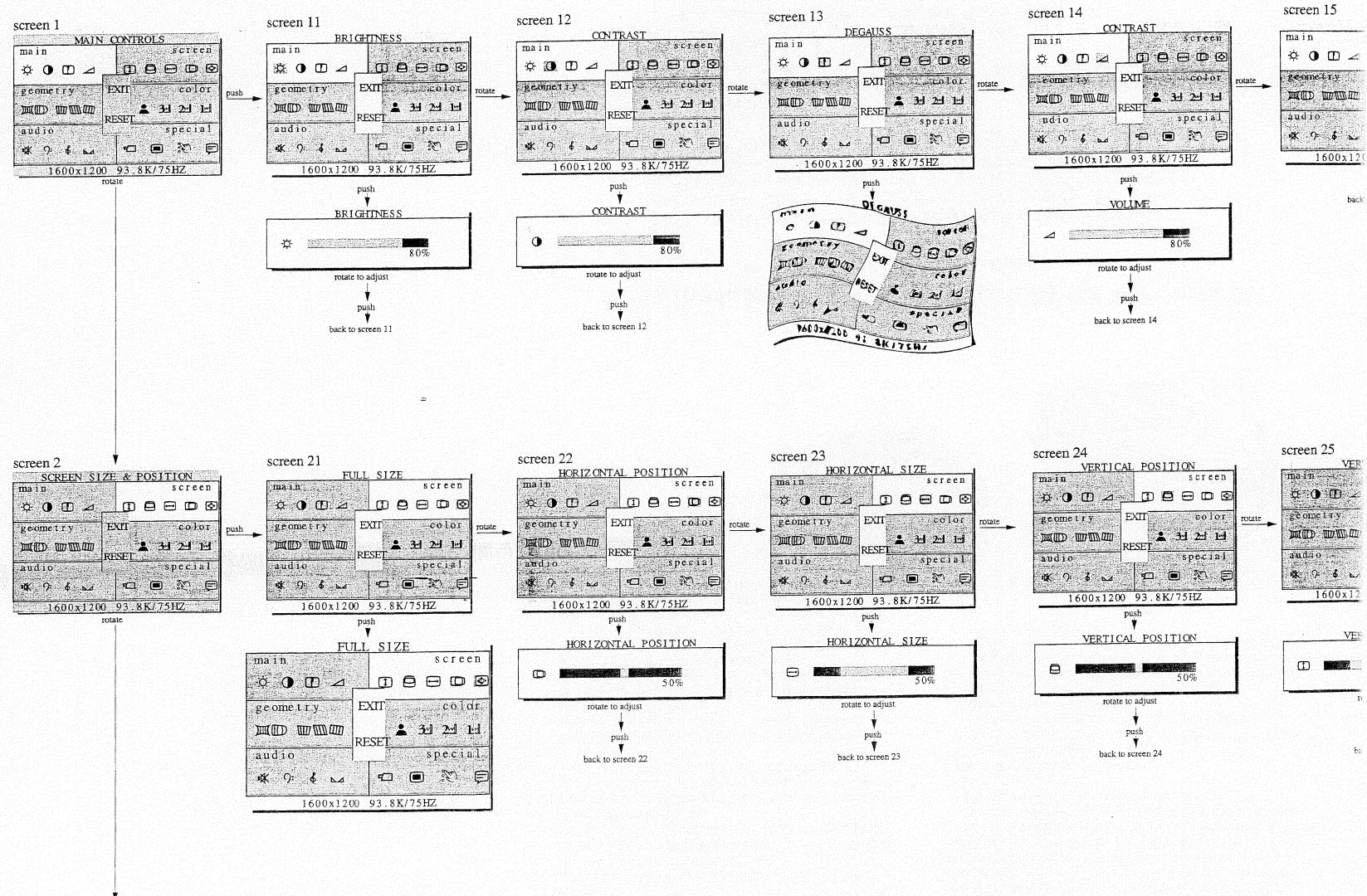
(Philips Monitors-Driver Disk)

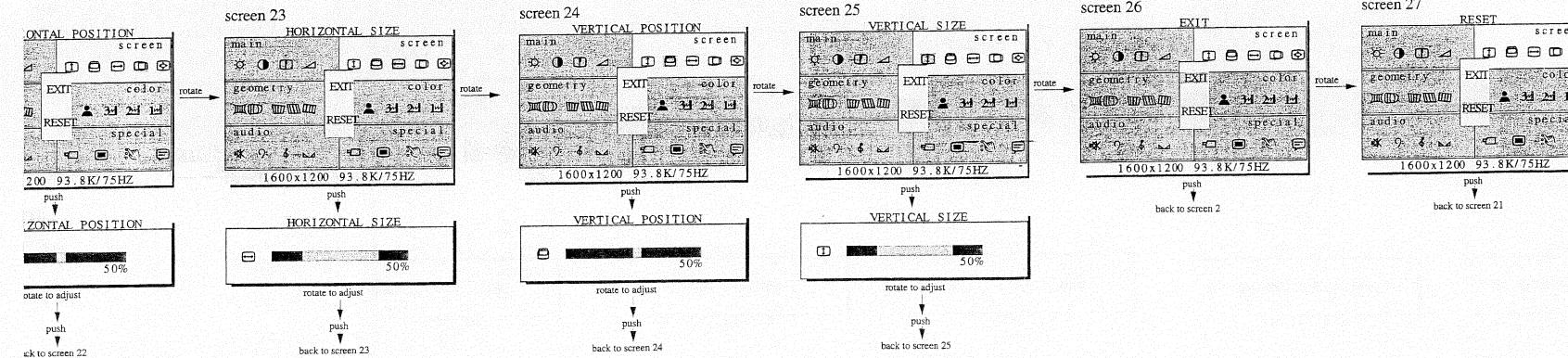
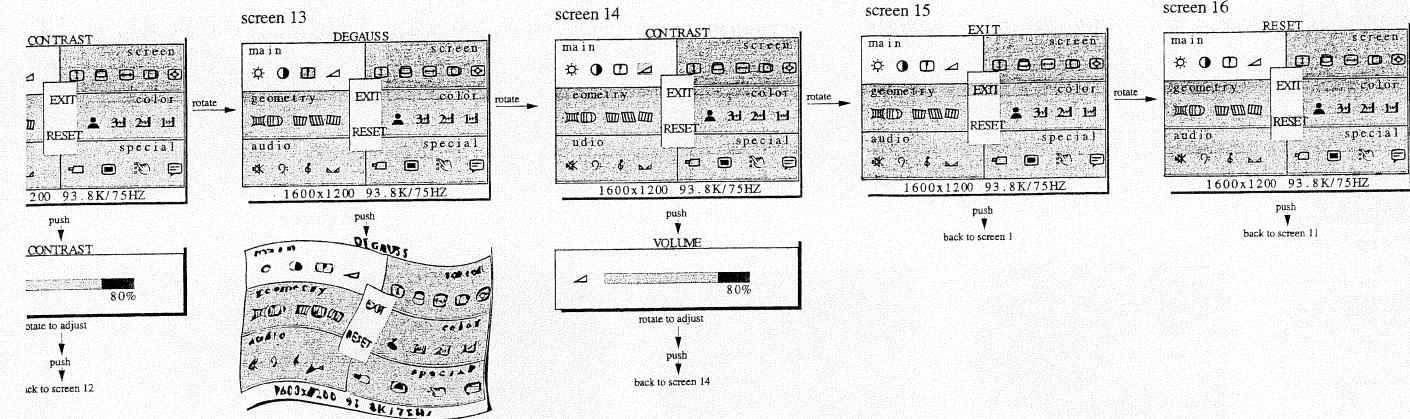
Philips' monitors build in VESA DDC1/2B feature to support Plug & Play requirement for Windows '95. You can install this information file (philips.inf) in order to select your Philips monitor from 'Monitor' dialog box in Windows '95 to activate Plug & Play application. The installation procedure based on Windows '95 OEM Release 2 is specified as follows,

1. Start Windows '95
2. Click the 'Start' button, point to 'Settings', and then click 'Control Panel'
3. Double-click the 'Display' icon, select the 'Settings' tab, then select 'Advanced Properties' tab.
4. Select "Ok" in the "Install From Disk" dialog box.
5. Now, you can see the Philips monitor is appeared.
6. If the model name of Philips monitor is correct, click "Ok" tab in "Select Device" dialog box.
7. Then, click "Close" tab in "Advanced Properties" dialog box.
8. Now, you can select "Refresh Rate" to change monitor resolution

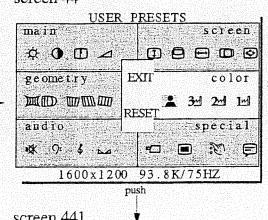
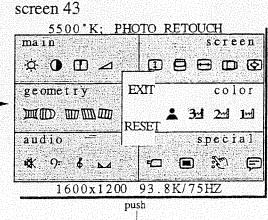
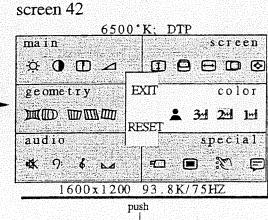
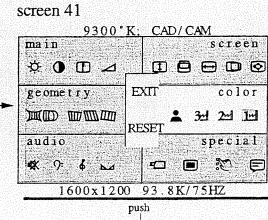
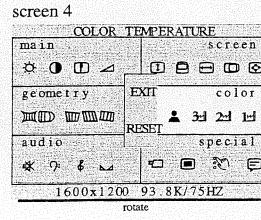
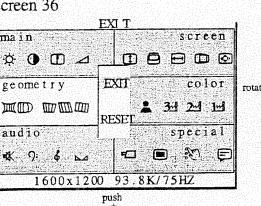
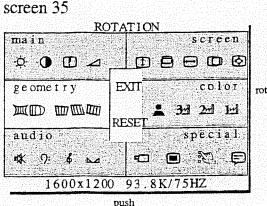
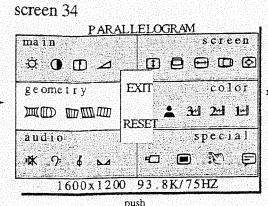
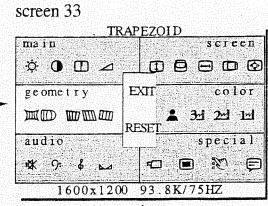
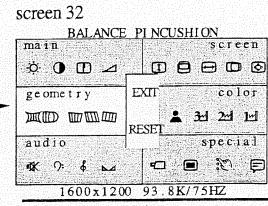
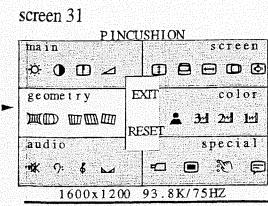
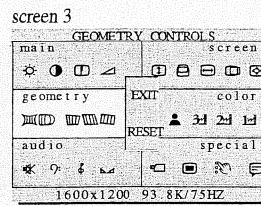
If your Windows '95 version is different or you need more detail installation information, please refer to Windows 95 user's manual.

Quick Reference for OSD Adjustment





Quick Reference for OSD Adjustment (Continued)



push

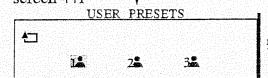
screen 441

USER PRESETS

rotate

USER PRESETS

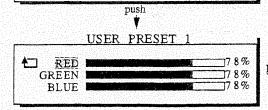
rotate



rotate

USER PRESET 1

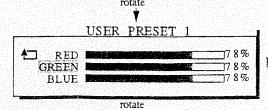
rotate



rotate

USER PRESET 2

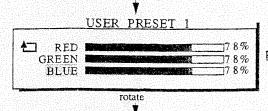
rotate



rotate

USER PRESET 1

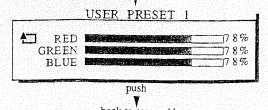
rotate



rotate

USER PRESET 2

rotate



rotate

USER PRESET 1

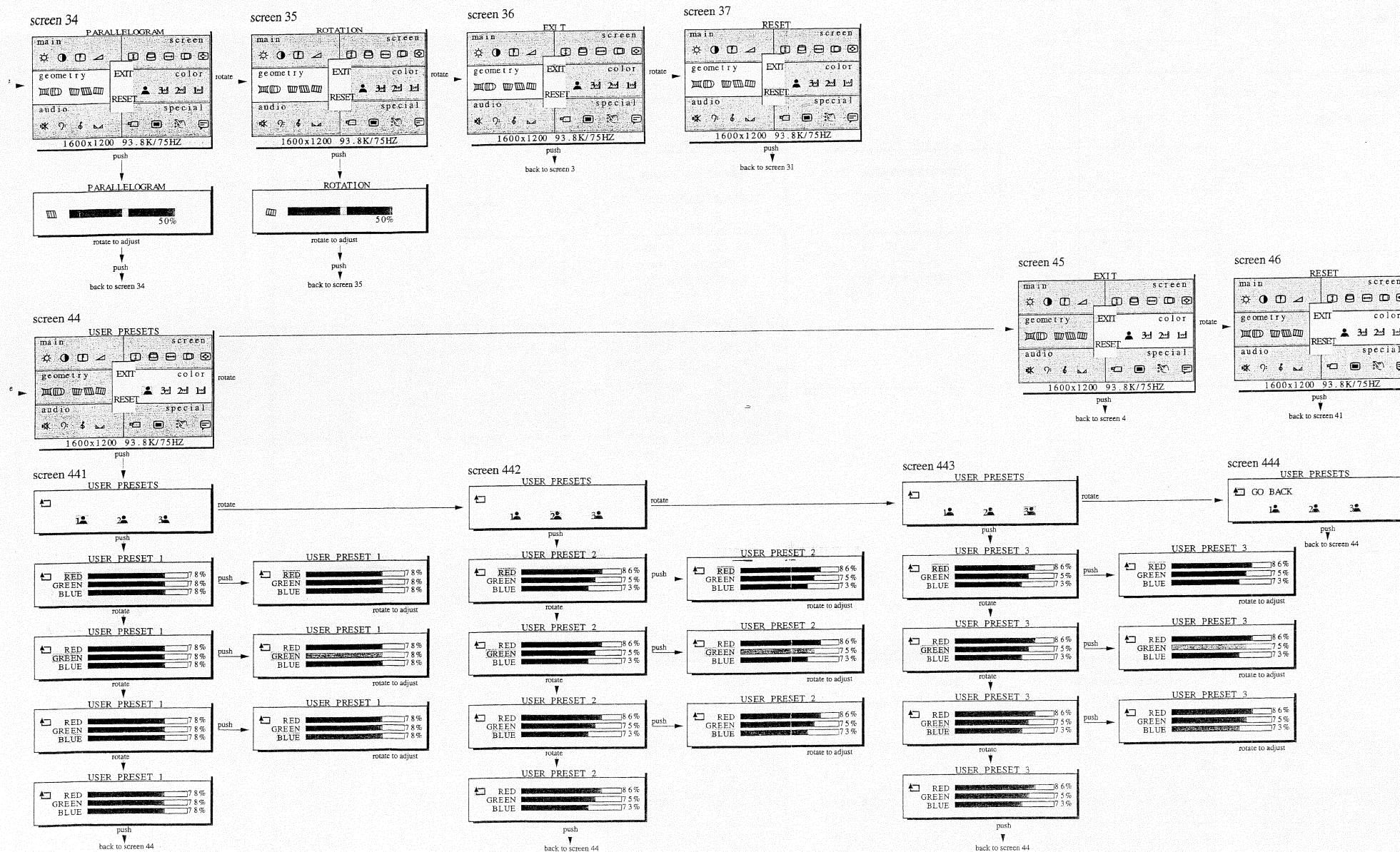
rotate

push

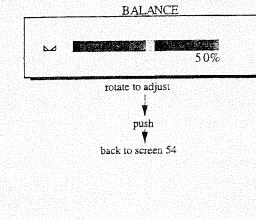
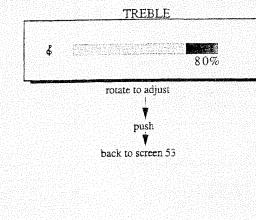
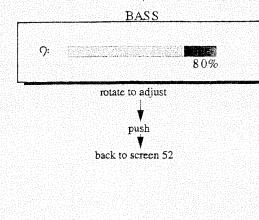
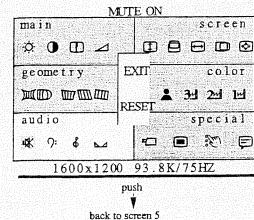
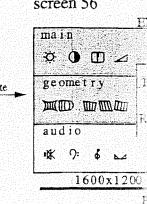
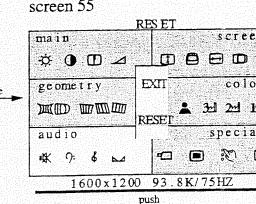
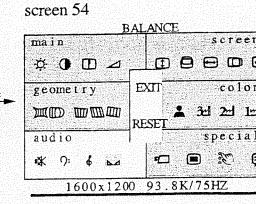
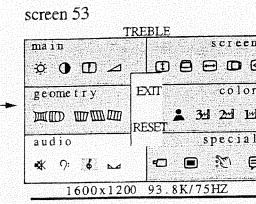
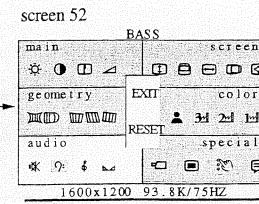
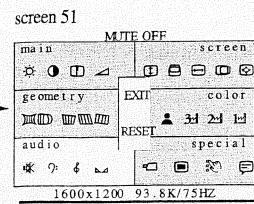
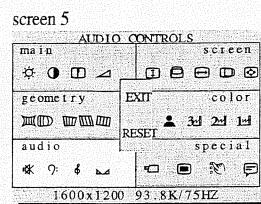
rotate

push

rotate

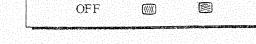
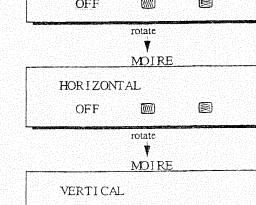
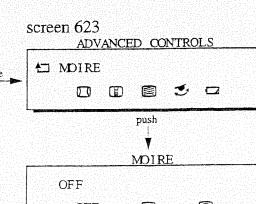
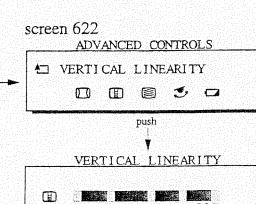
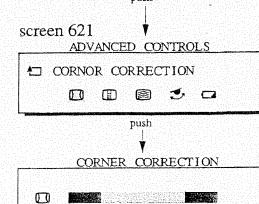
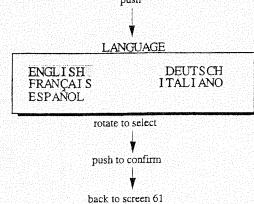
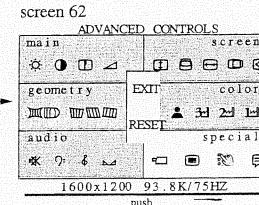
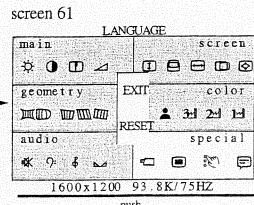
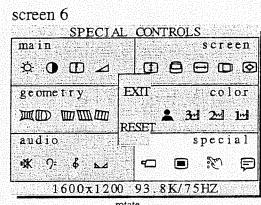


Quick Reference for OSD Adjustment (Continued)



back to screen 51

back to



SCREE

NE

rotate to adjust

push

back to screen 623

rotate to adjust

push

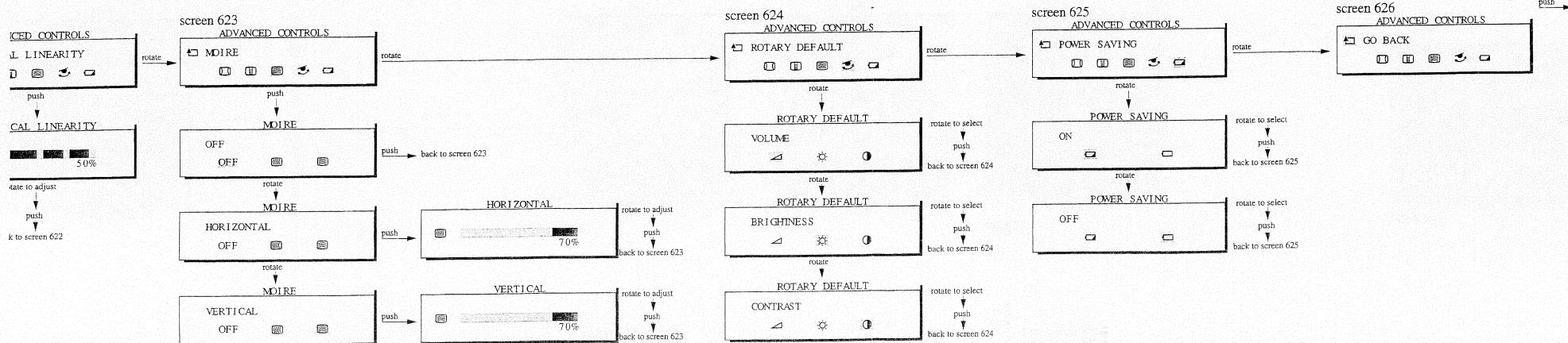
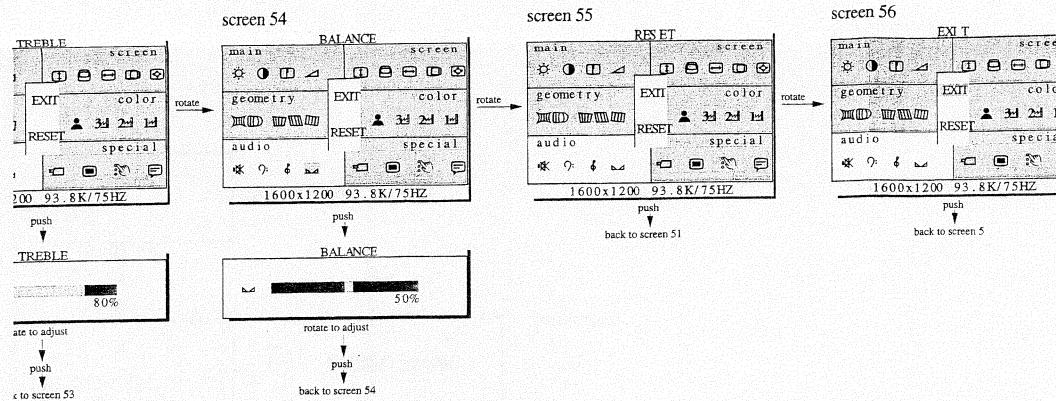
back to screen 624

rotate to adjust

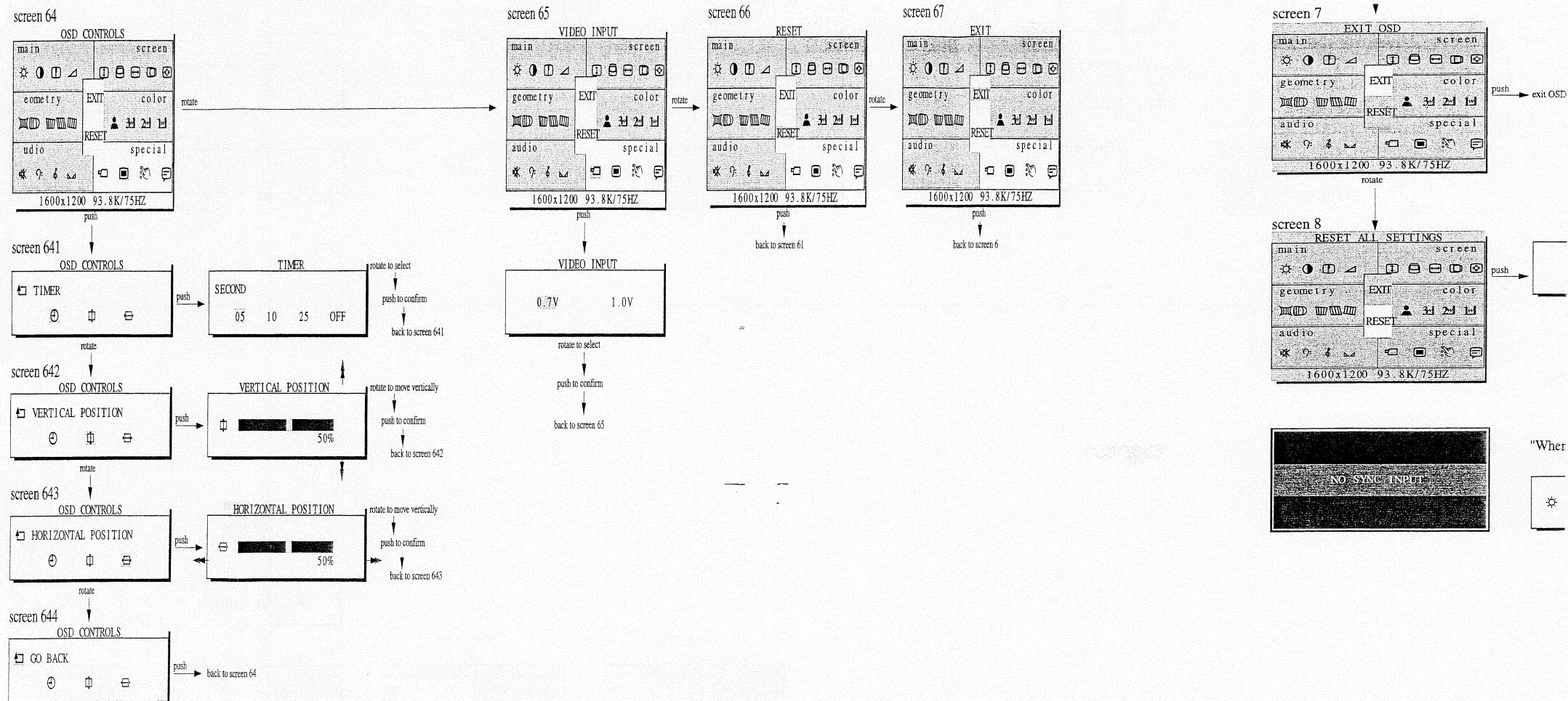
push

back to screen 625

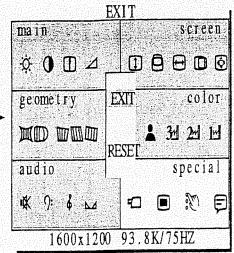
continued)



Quick Reference for OSD Adjustment (Continued)

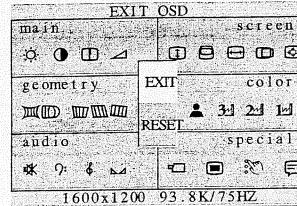


screen 6



push
↓
back to screen 6

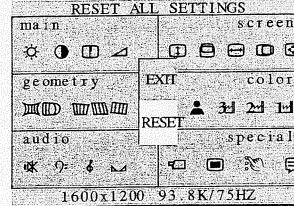
screen 7



push → exit OSD

rotate

screen 8

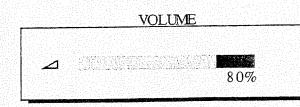
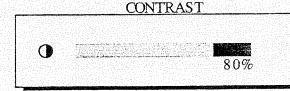
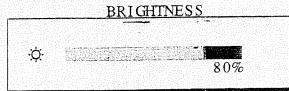
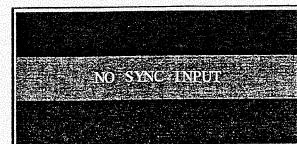


push → RESET ALL SETTINGS

NO YES

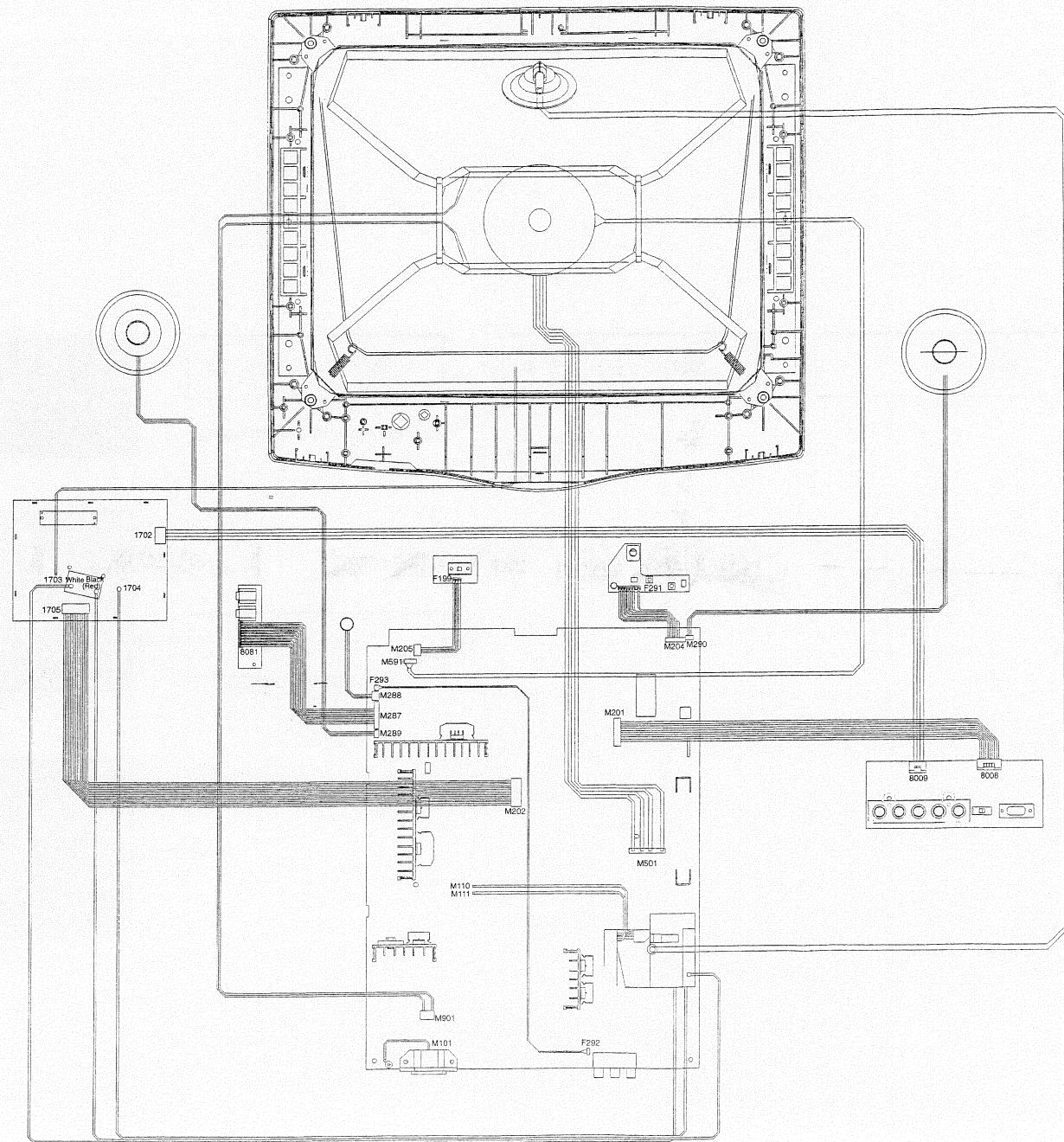
push → back to screen 1

"When rotary default setting selected"



Wiring diagram

19A CM5800 15



Mechanical Adjustments

0. Location of the panel

- 0.1 Main panel (1156)
- 0.2 Video panel (1157)
- 0.3 Earphone panel (1158)
- 0.4 Terminal panel (1159)
- 0.5 USB panel (1160) - optional
- 0.6 Encoder panel (1162)
- 0.7 Power switch panel (1163)

1. General

To be able to perform measurements and repairs on the circuit boards, the monitor should be placed in **Service Position** (Fig. 3.1) first:

How to remove the back cover of monitor:

There are 4 screws [2 screws are at the rear of the monitor, the other two screws are on the bottom of the monitor] to fix the front cabinet and back cover of the monitor.

- Step 1: Remove the "cable cover" as shown in Fig. 3.2.
- Step 2: Remove 2 screws (rear view) as shown in Fig. 3.3.
- Step 3: Turn the set to remove the other 2 screws, as shown in Fig. 3.4.
- Step 4: Turn the set to its original position.
- Step 5: Remove back cover (* There are two "plastic clips" on the "front cabinet" to hold the "rear cover" as shown in Fig. 3.5).

Chassis :

After removing the back cover, you can see the inside of the monitor with metal frame and metal shield.

- Remove 26 screws for service position as Fig. 3.6 to Fig. 3.15.

Video panel :

- After removing the metal frames, remove the metal shielding on rear side of Video panel for measurement.

Main panel :

- After removing the metal frames,
- Disconnect "Video panel"
- Disconnect EHT cable (EHT cap)
- Disconnect 4 pin connector "M1501" (wire of YOKE, on Main panel)
- Disconnect 2 pin connector "M1114" (degaussing coil, on Main panel)
- Disconnect 1 pin connector "M1701" (on Video panel)
- Disconnect 2 pin connector "M1219" (on Main panel)
- Disconnect 9 pin connector "M1217" (on Main panel)
- Disconnect 3 pin connector "M1213" (on Main panel)
- Disconnect 3 pin connector "M1504" (on Main panel)
- Disconnect 2 pin connector "M1218" (on Main panel)
- Disconnect 2 pin connector "M1220" (on Main panel)
- Disconnect 7 pin connector "M1212" (on Main panel)

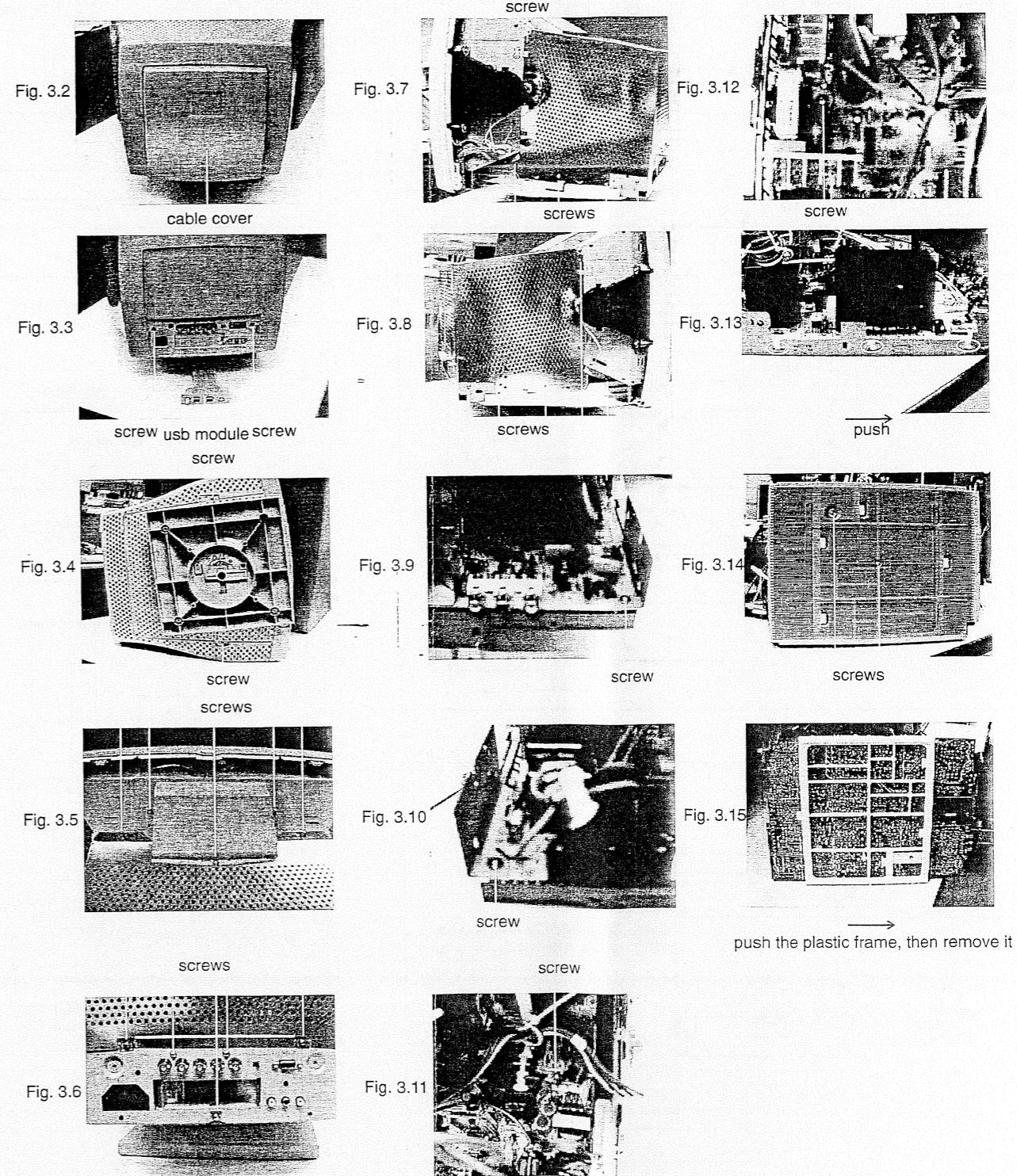
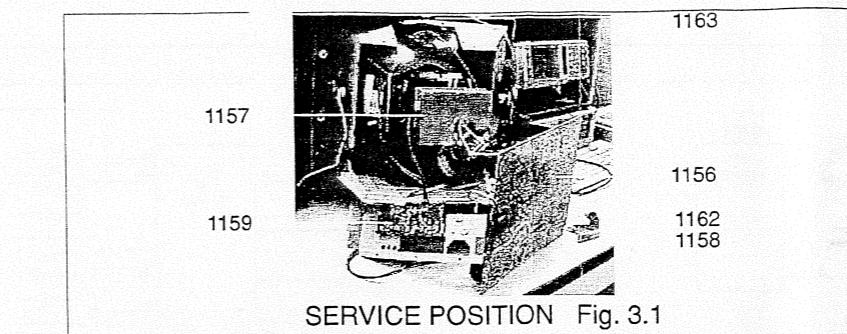
- To slide out Main panel.
- Remove 2 screws as shown in Fig. 3.14, then push the clips to the right as shown in Fig. 3.13, to separate the bottom plate.
- Remove the plastic frame as shown in Fig. 3.15.
- Remove the "Rotary panel" "Earphone panel" from Front cabinet and place it on the table as shown in Fig. 3.1.
- Connect all the connectors and panels for service position.

Service position :

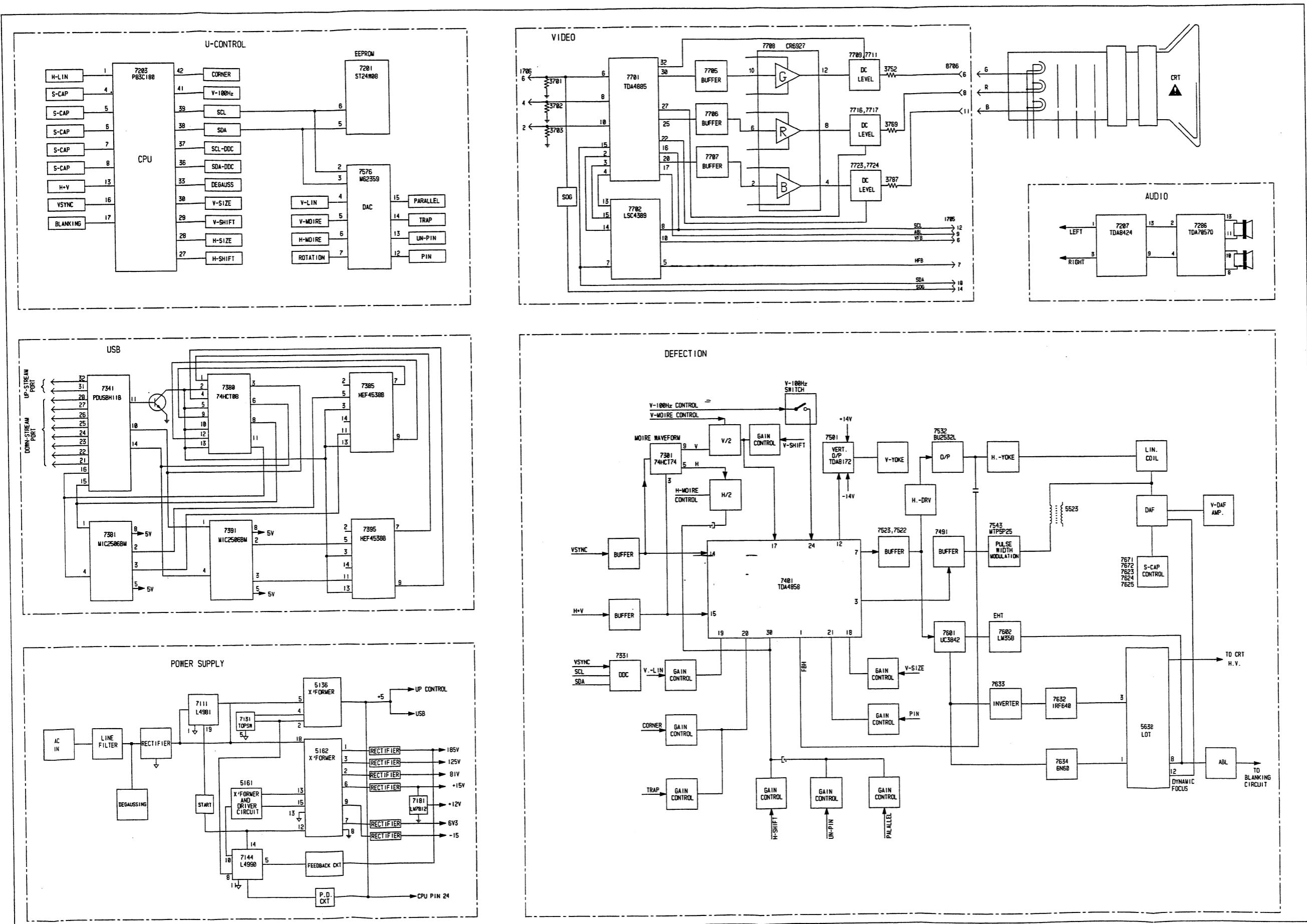
Place monitor in service position as shown in Fig. 3.1 through Fig. 3.15.

2. Repair instructions

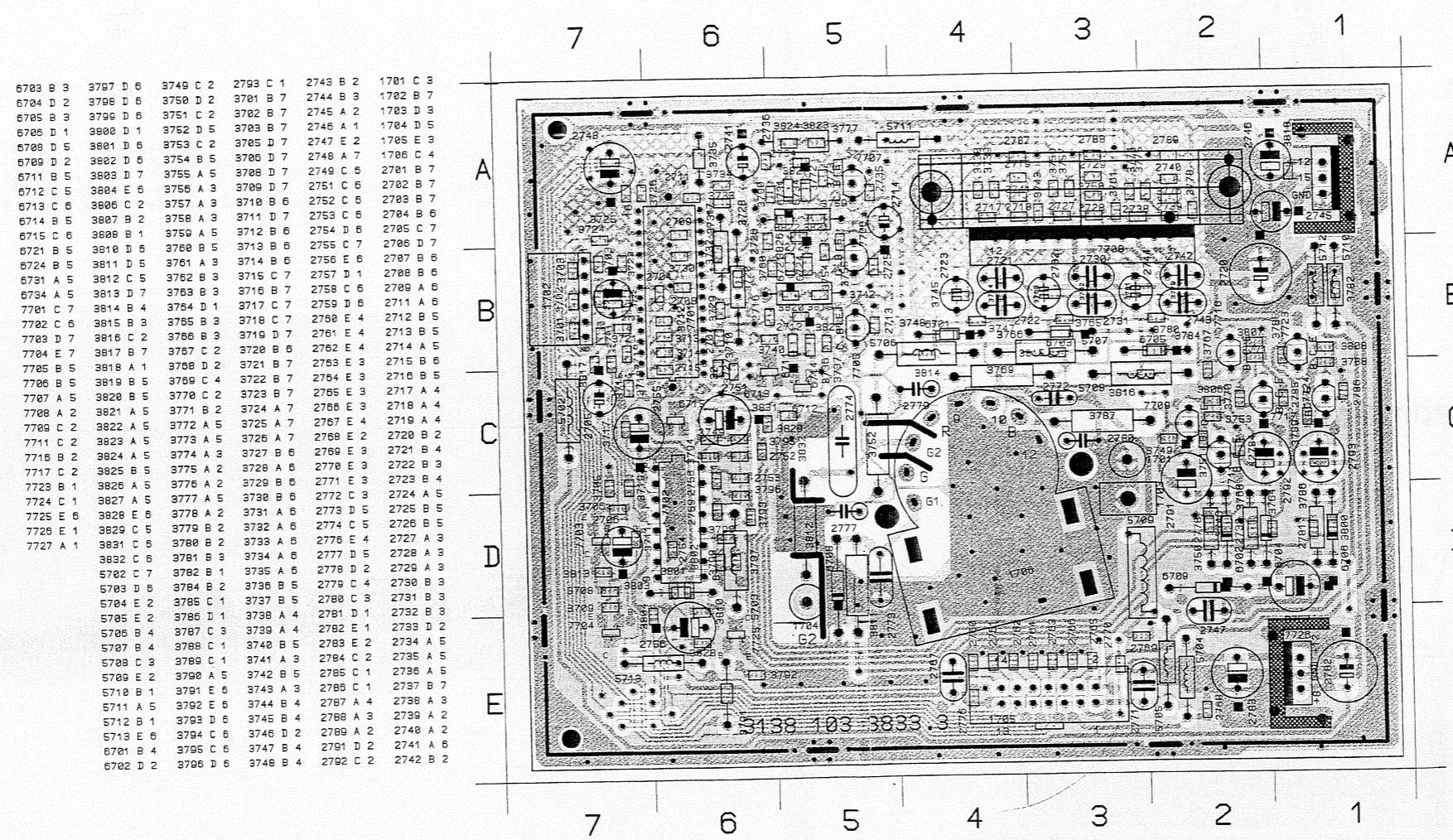
After the service position is obtained, all the panel's copper trace sides may be accessed.



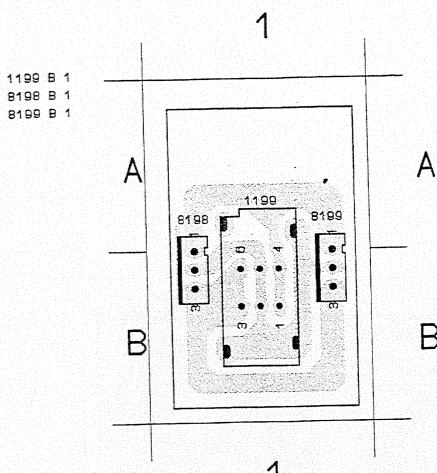
Block Diagram



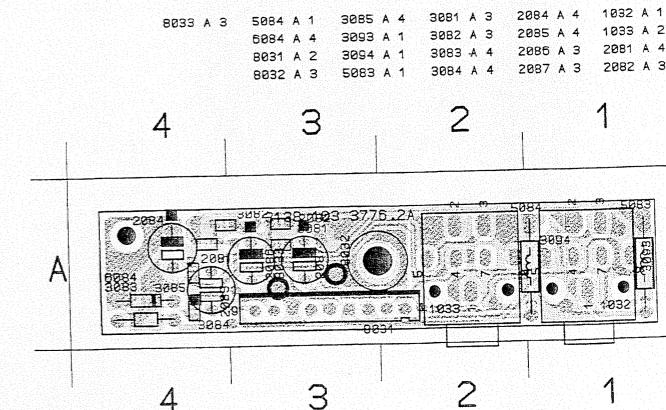
Video Panel C.B.A. (A)



Power Switch Panel C.B.A. (G)



Earphone Panel C.B.A. (F)

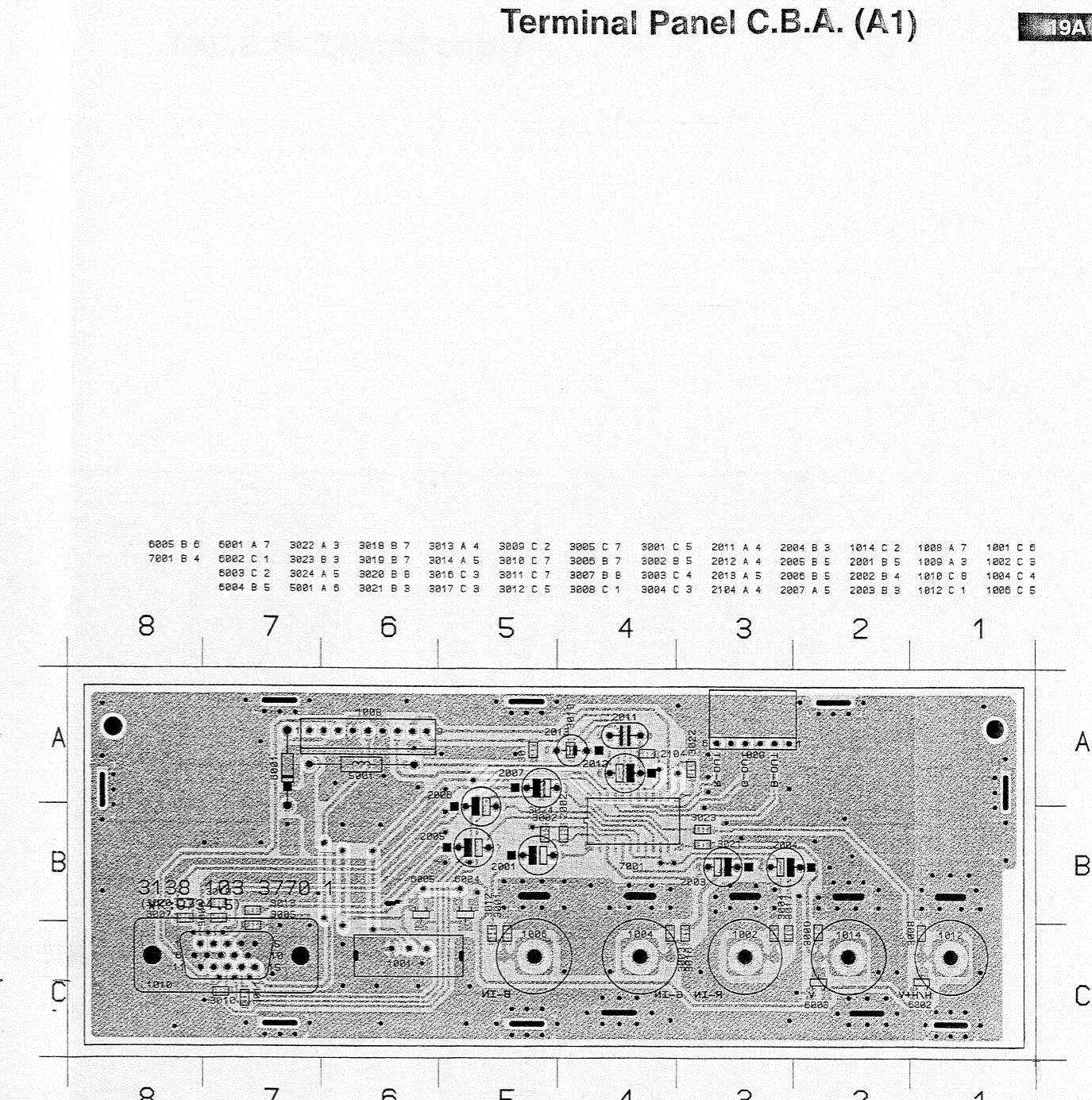
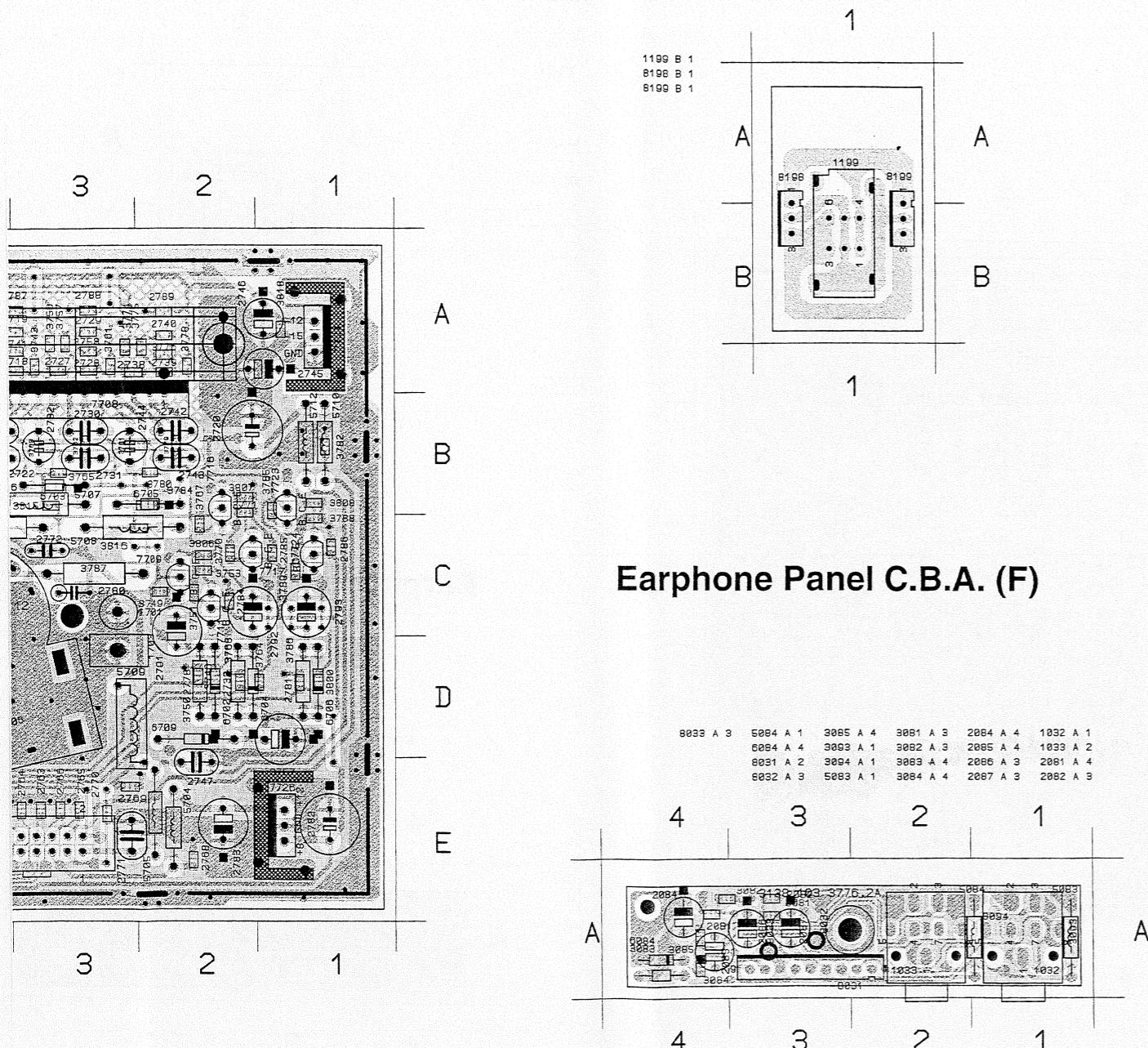


Power Switch Panel C.B.A. (G)

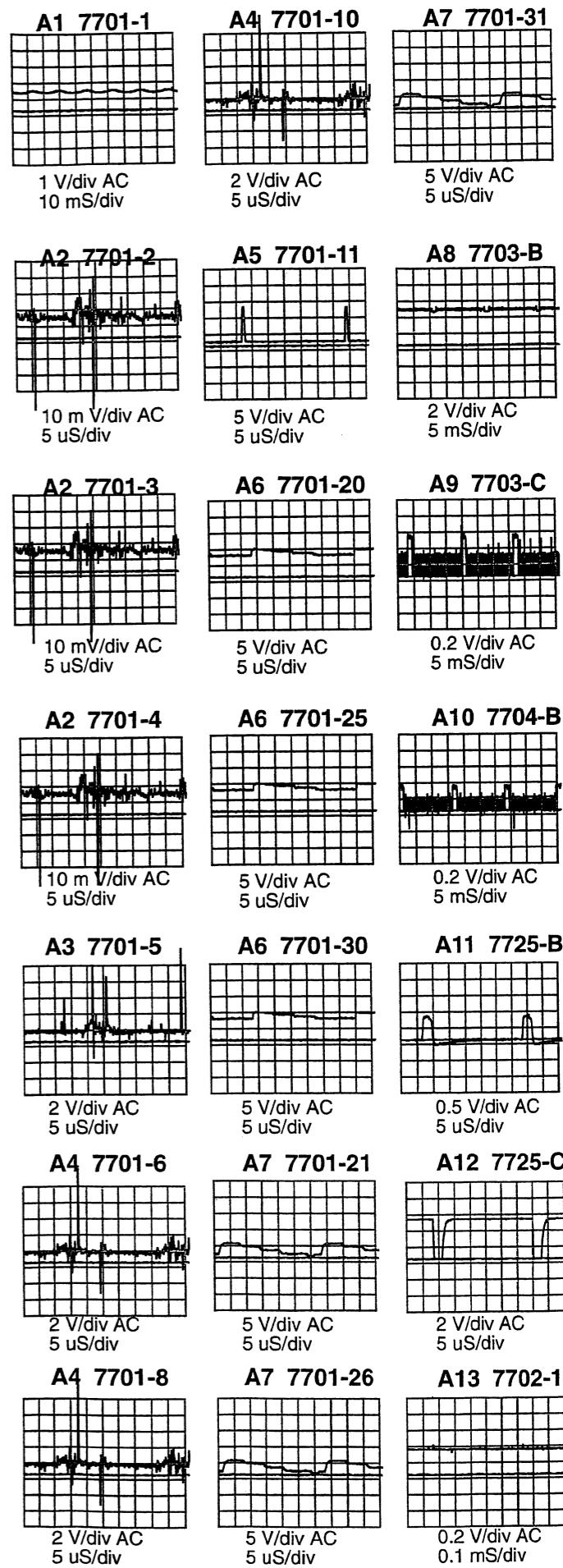
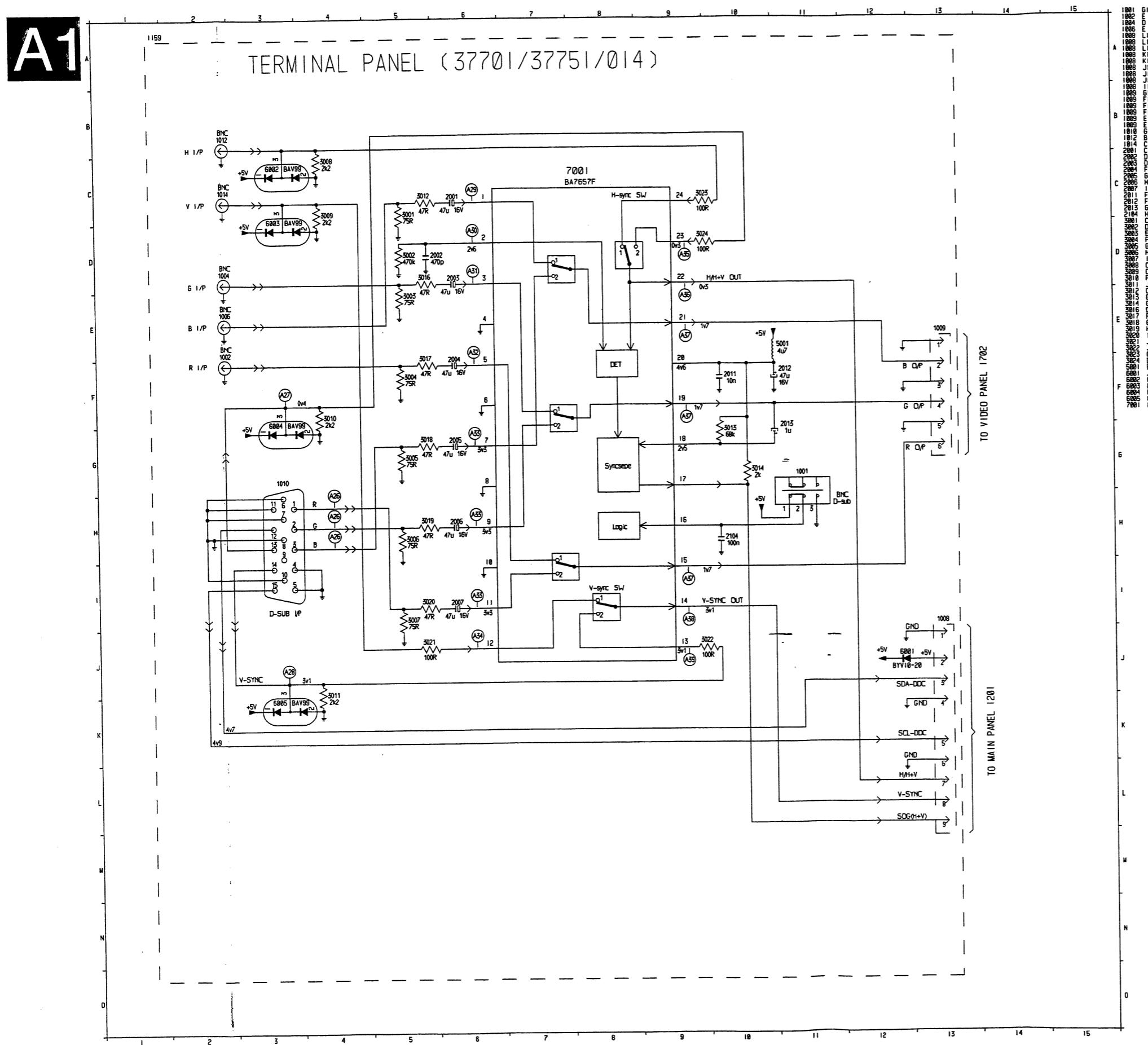
Terminal Panel C.B.A. (A1)

19ACM5800

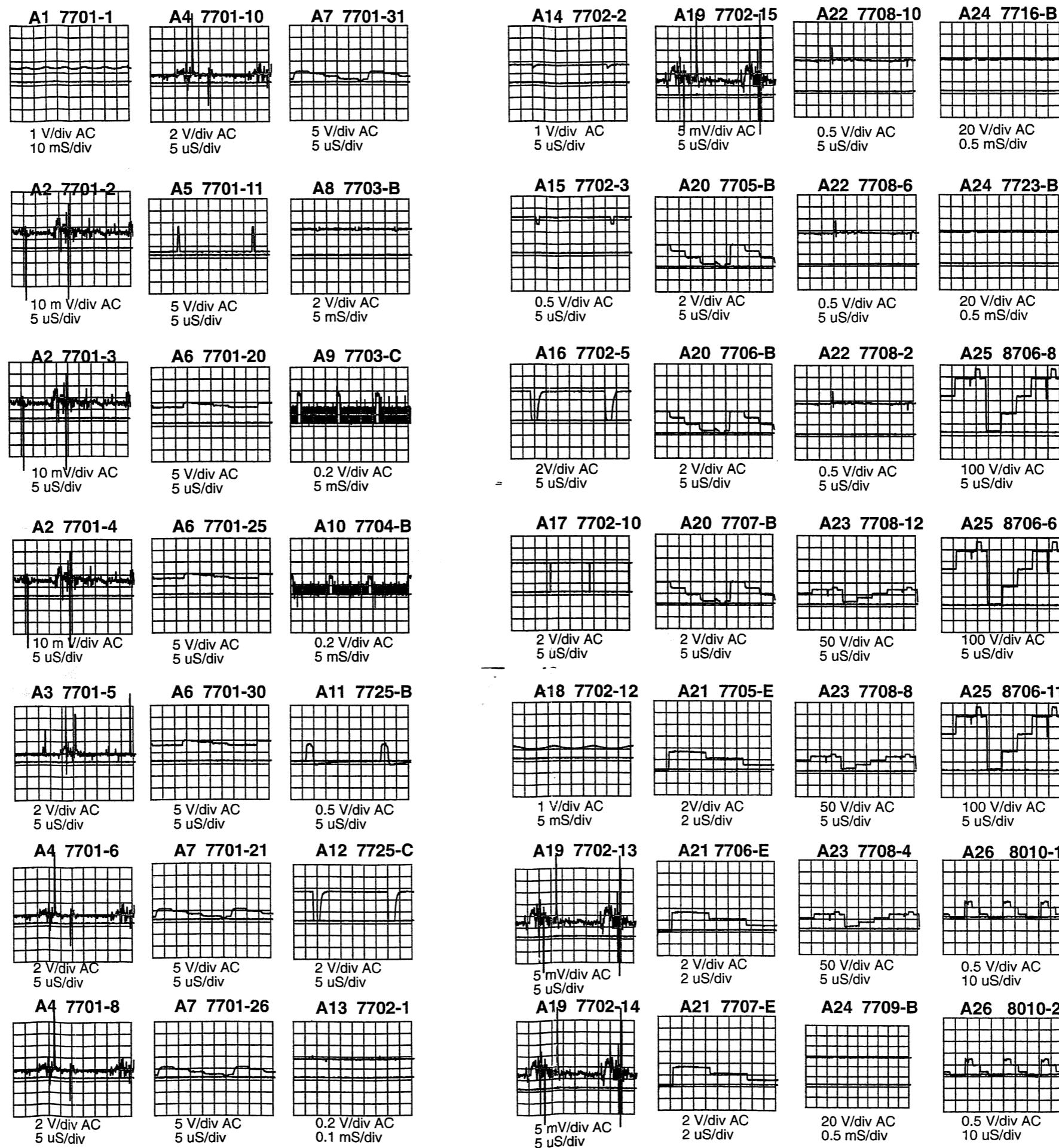
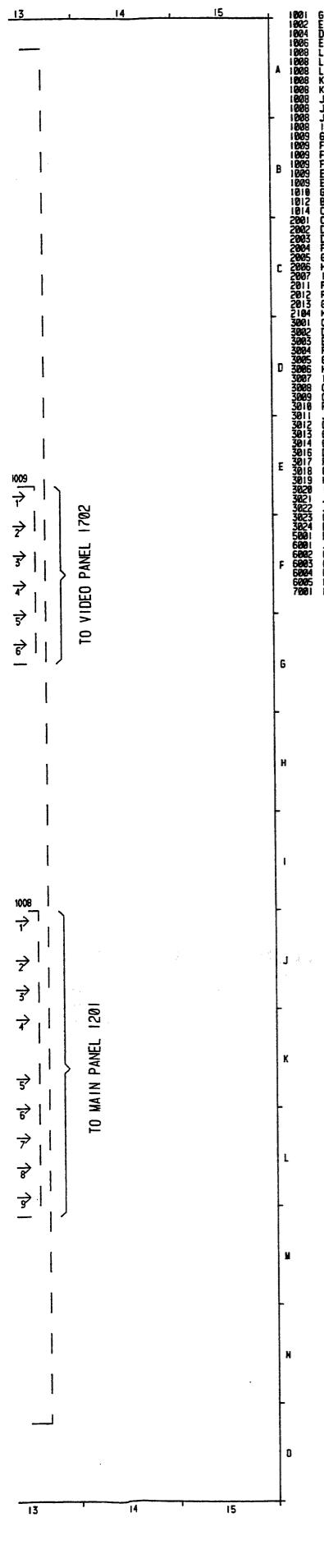
17



Terminal Schematic Diagram

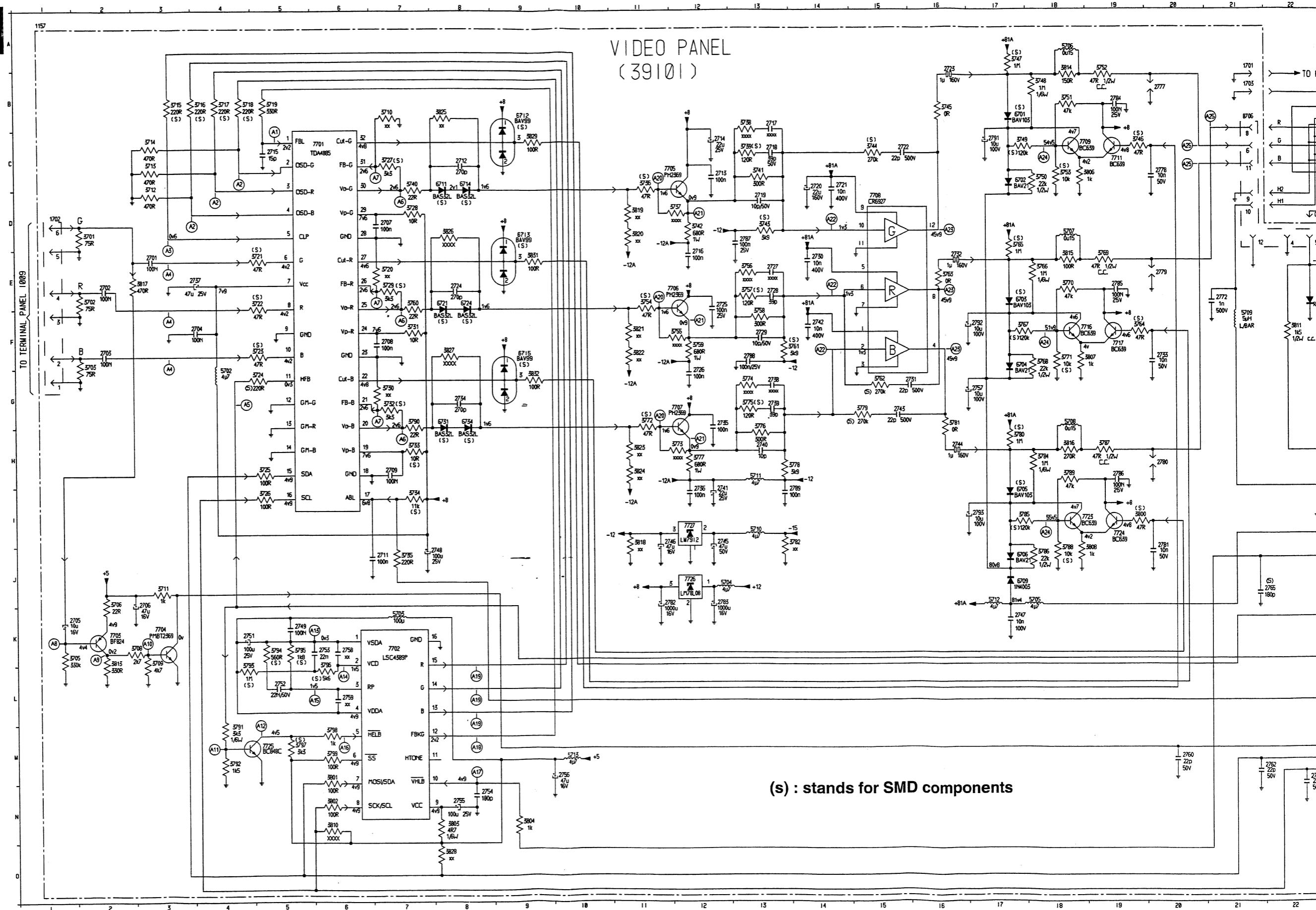


Waveforms for Diagram A1 and A2



Video Schematic Diagram

A2



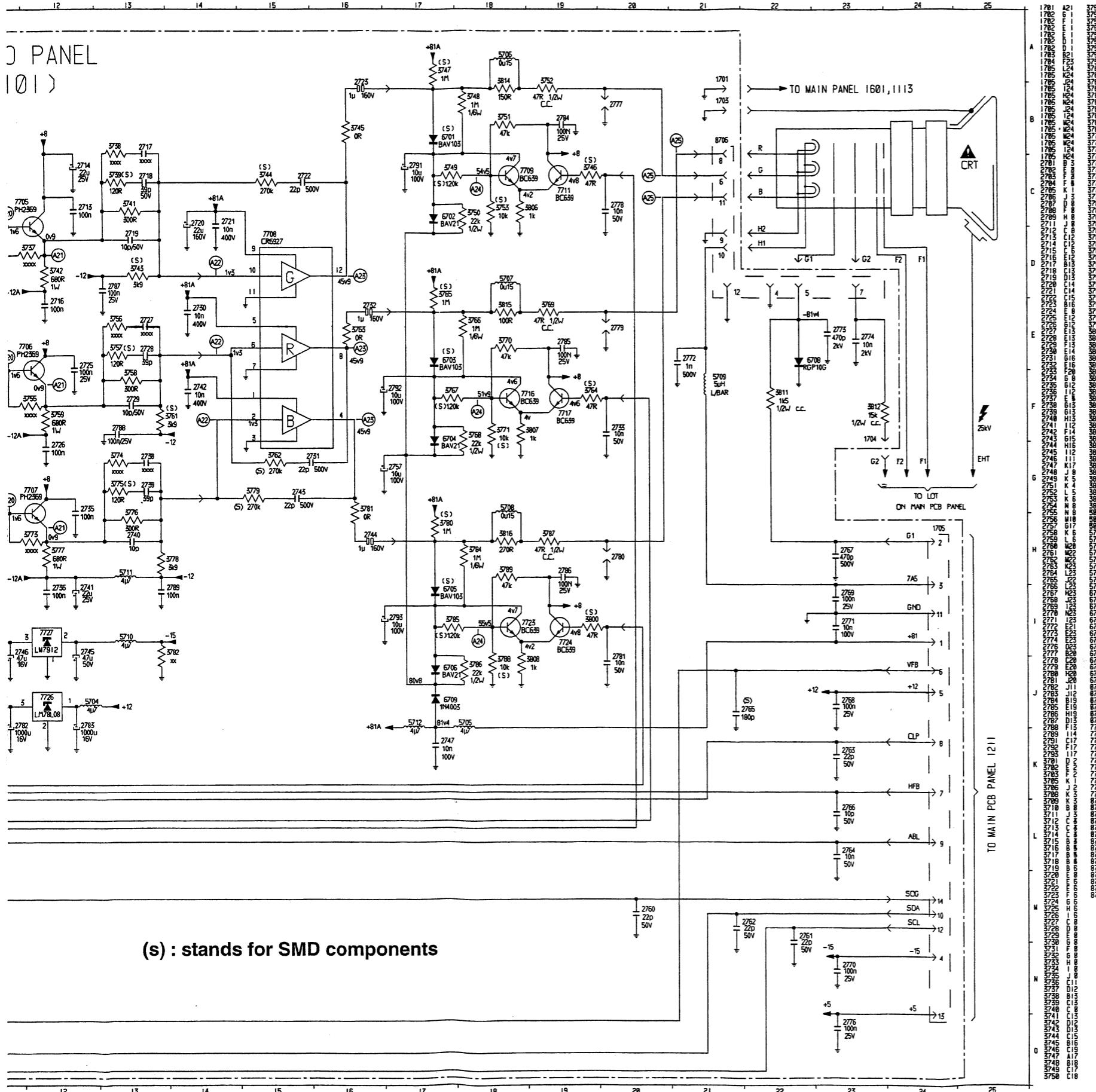
(s) : stands for SMD components

Waveforms for Diagram A1

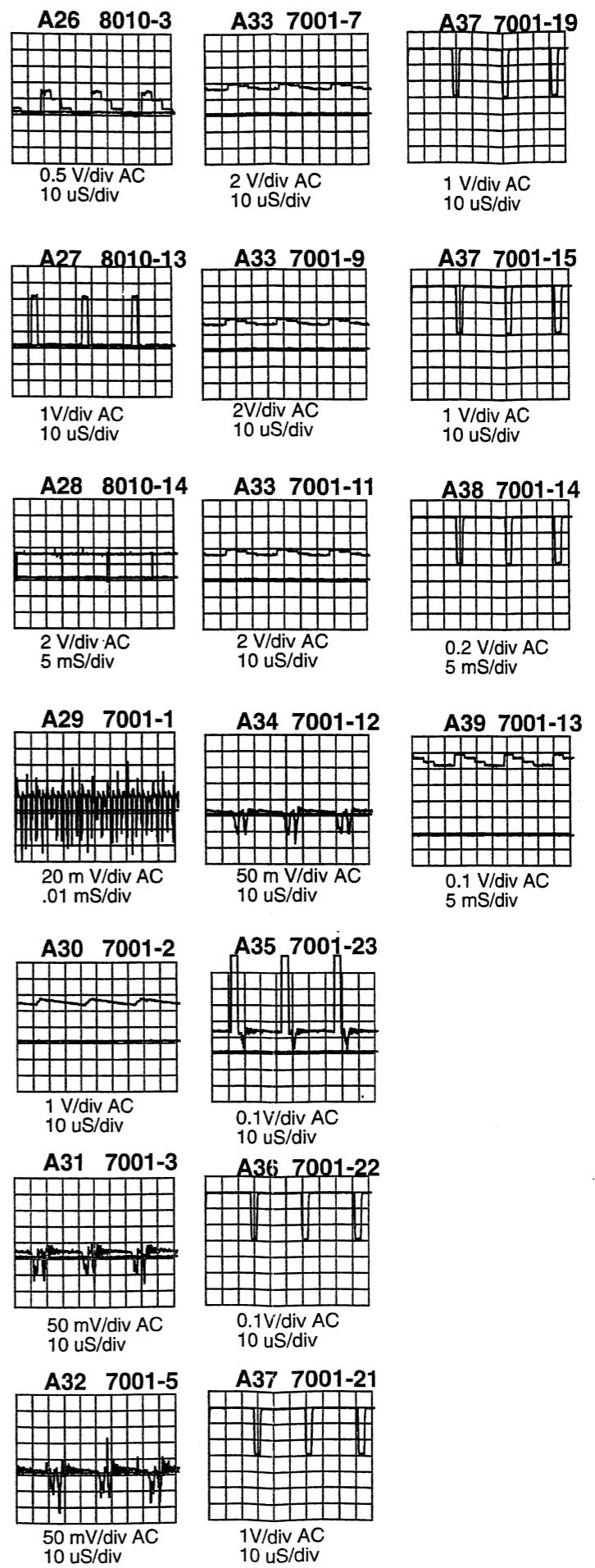
19A CM5800

9

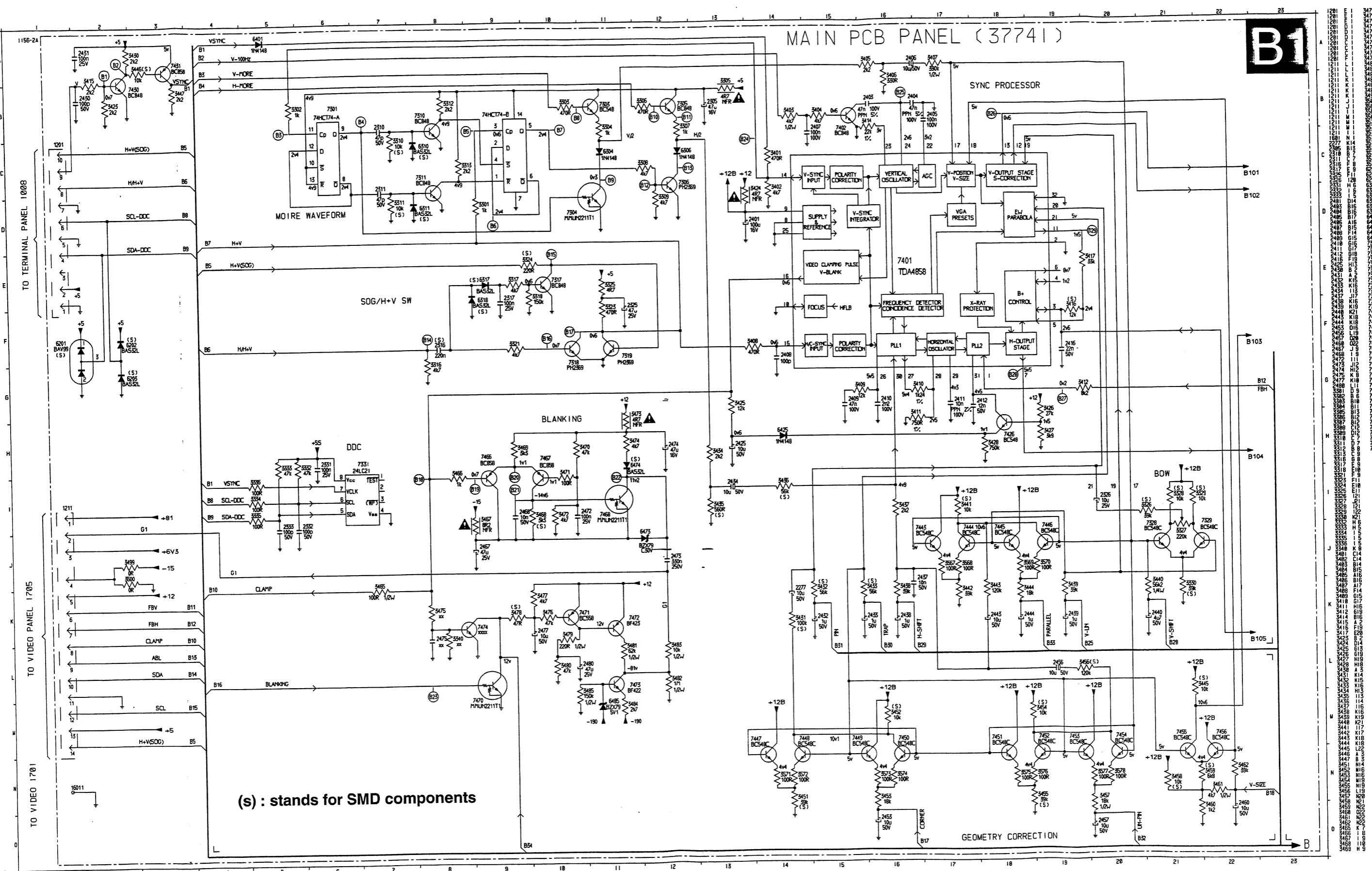
3 PANEL
[01]



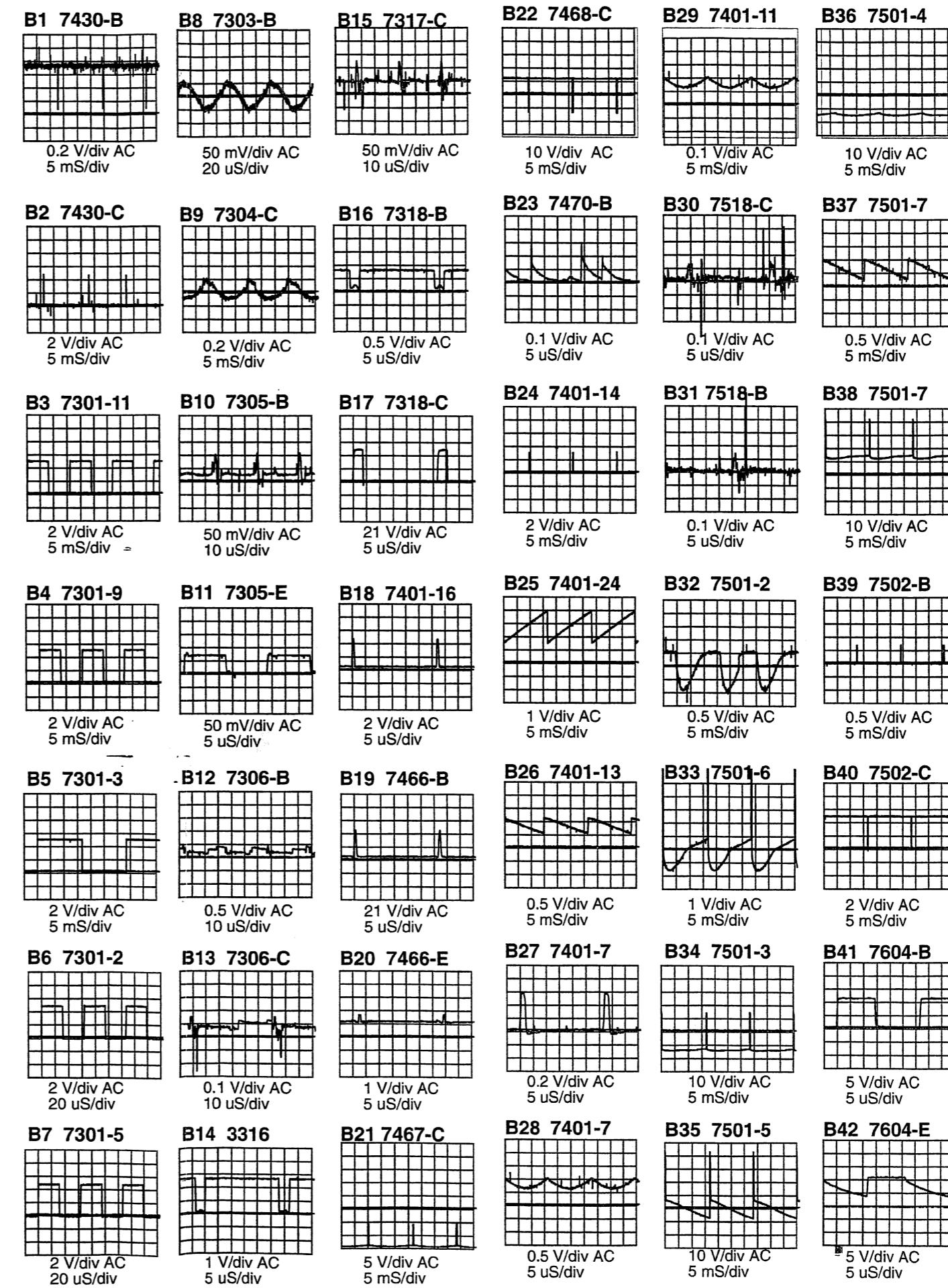
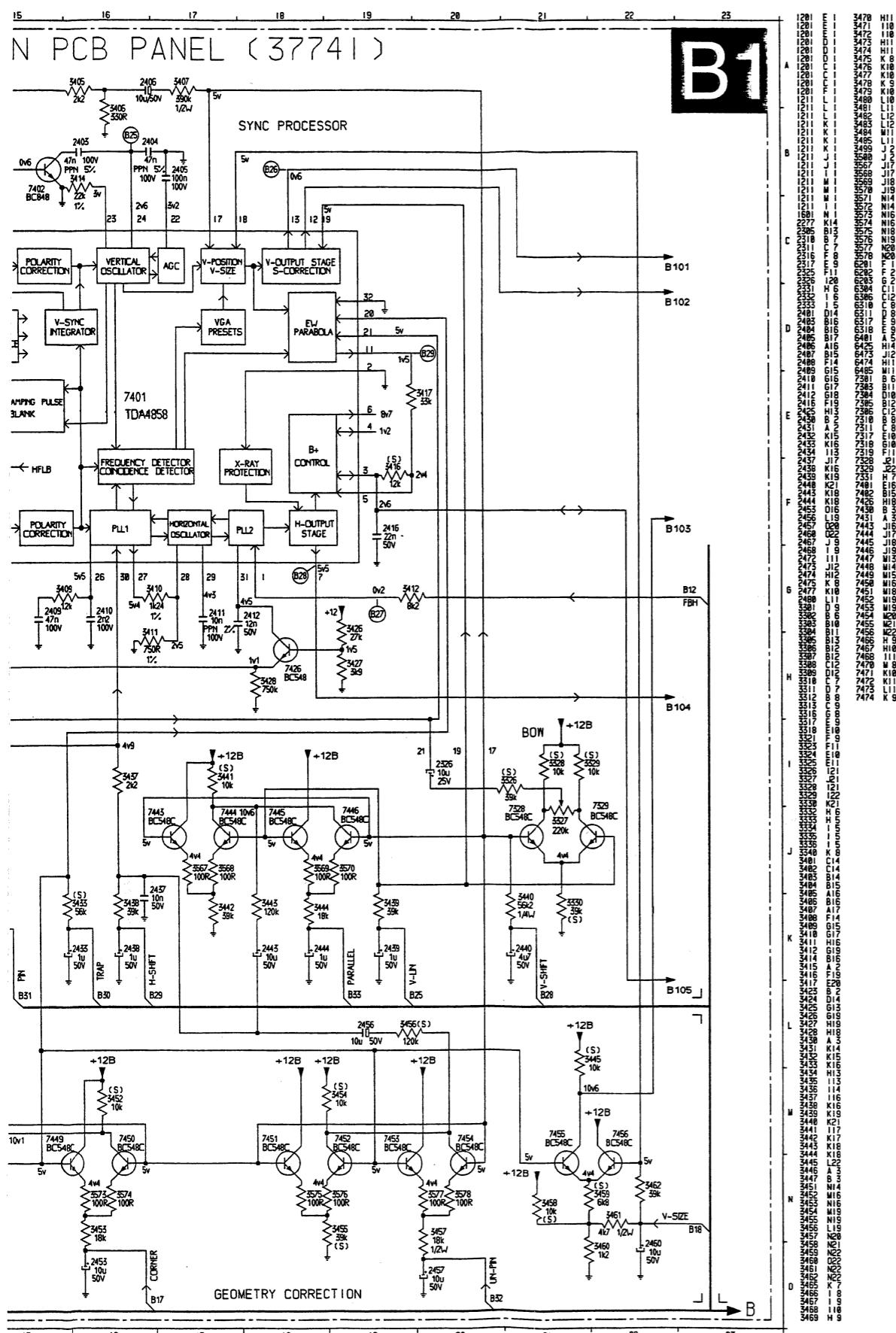
(s) : stands for SMD components



Deflection Schematic Diagram

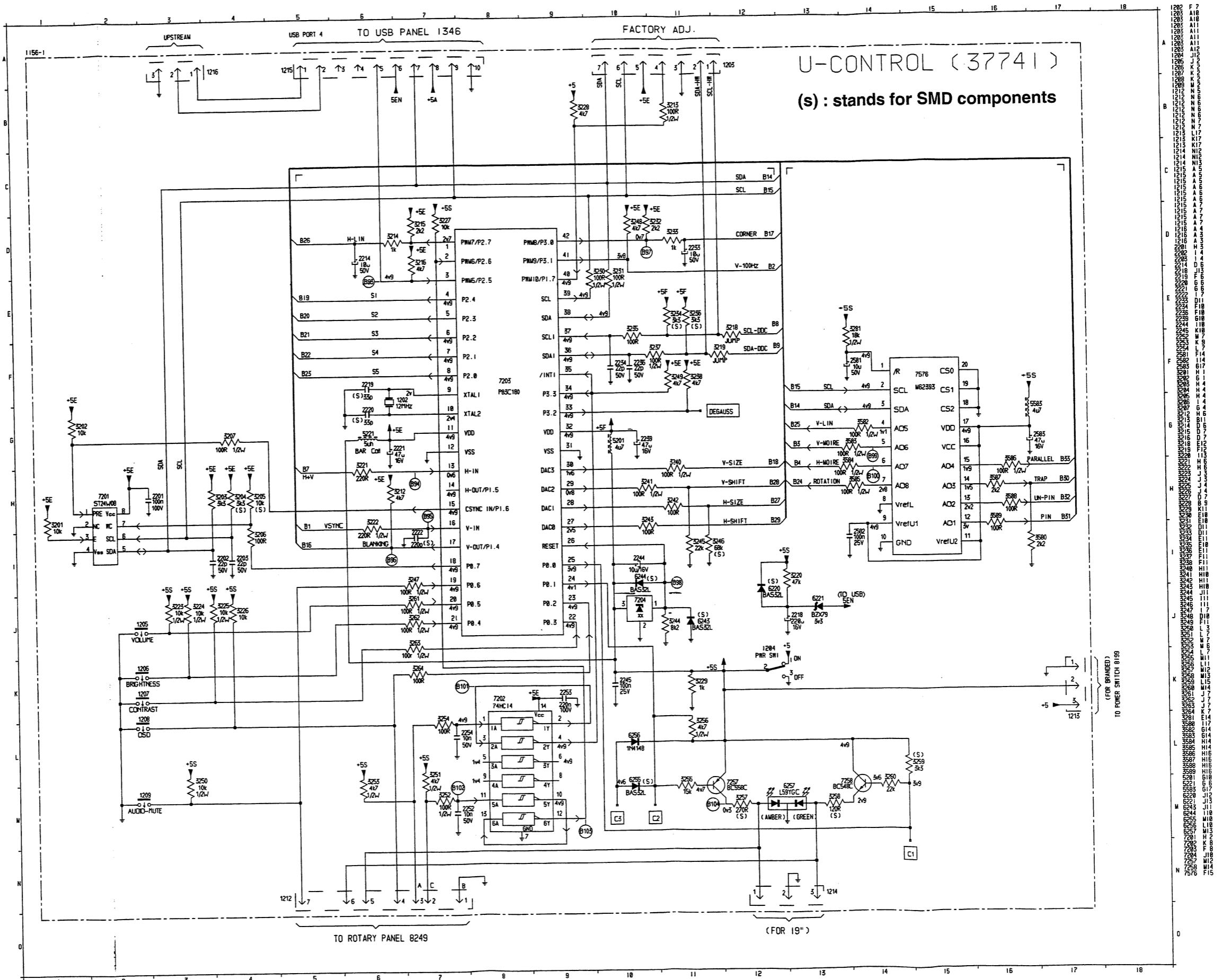


Waveforms for Diagram B1 and B2

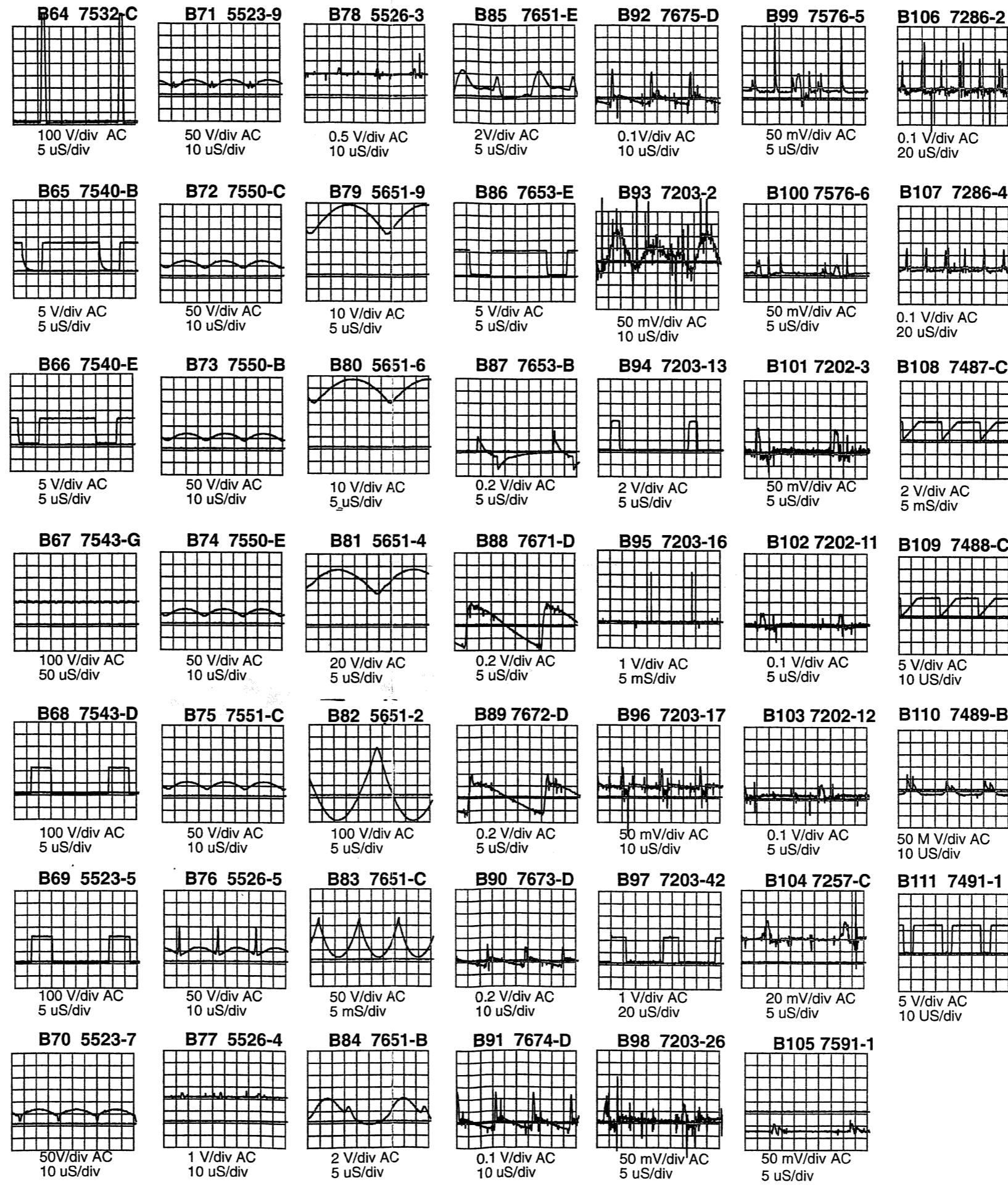
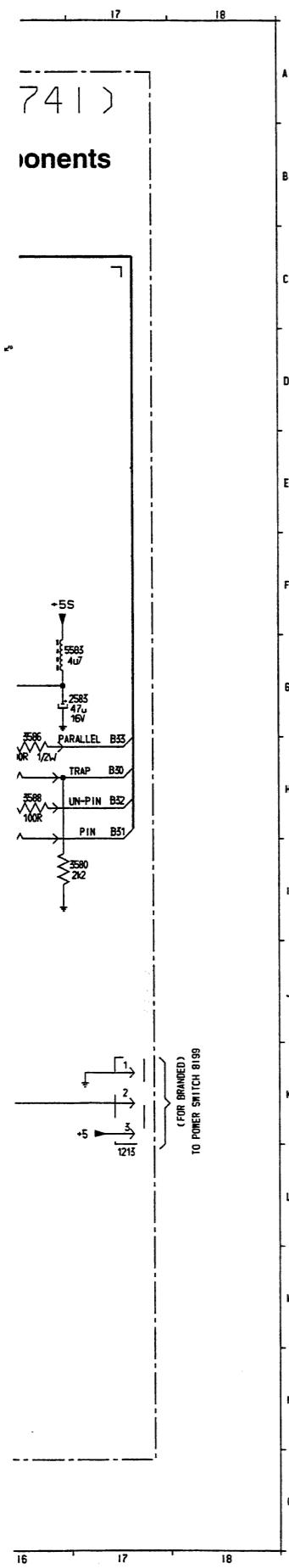


U-CTRL Schematic Diagram

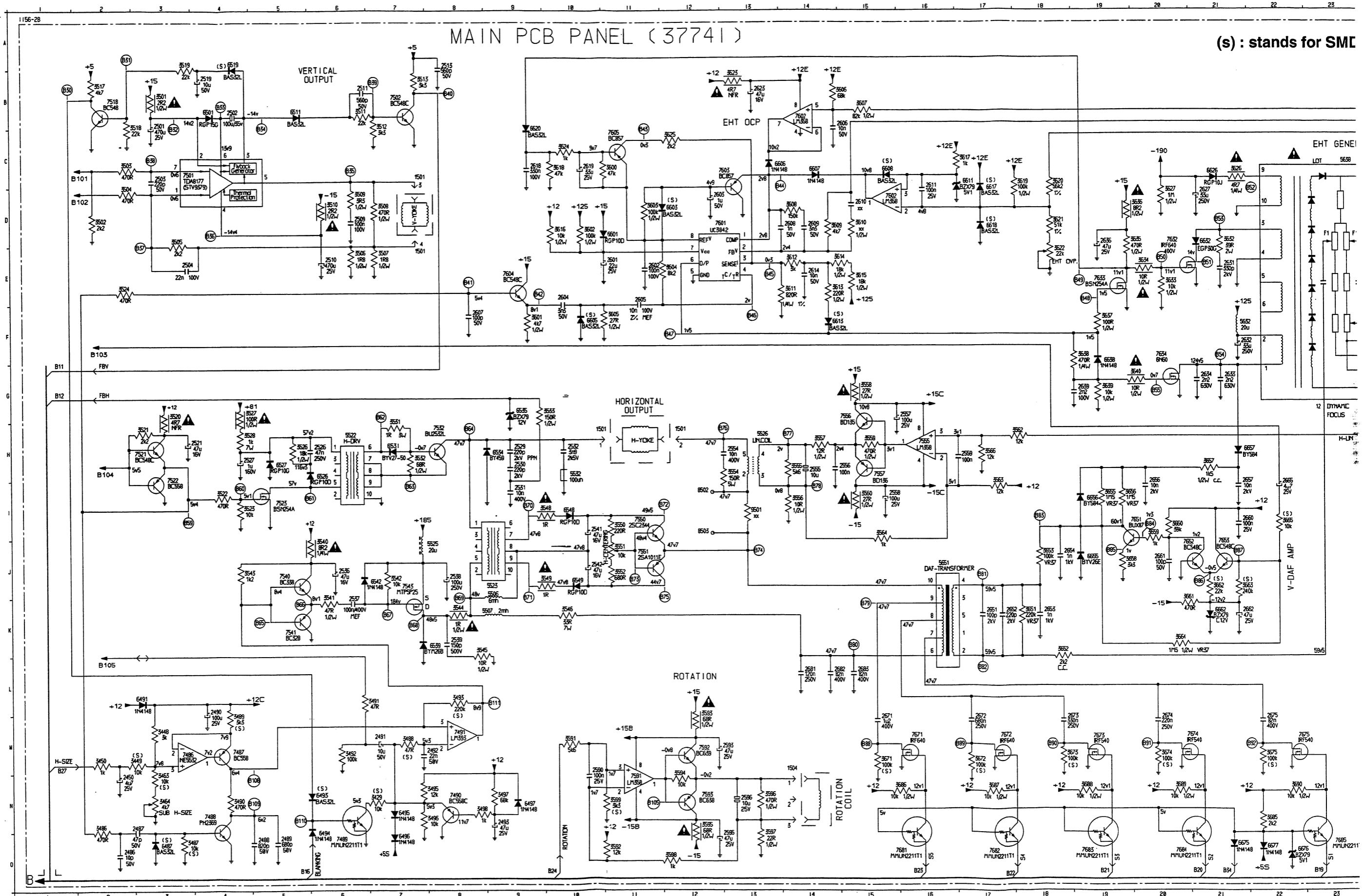
B3

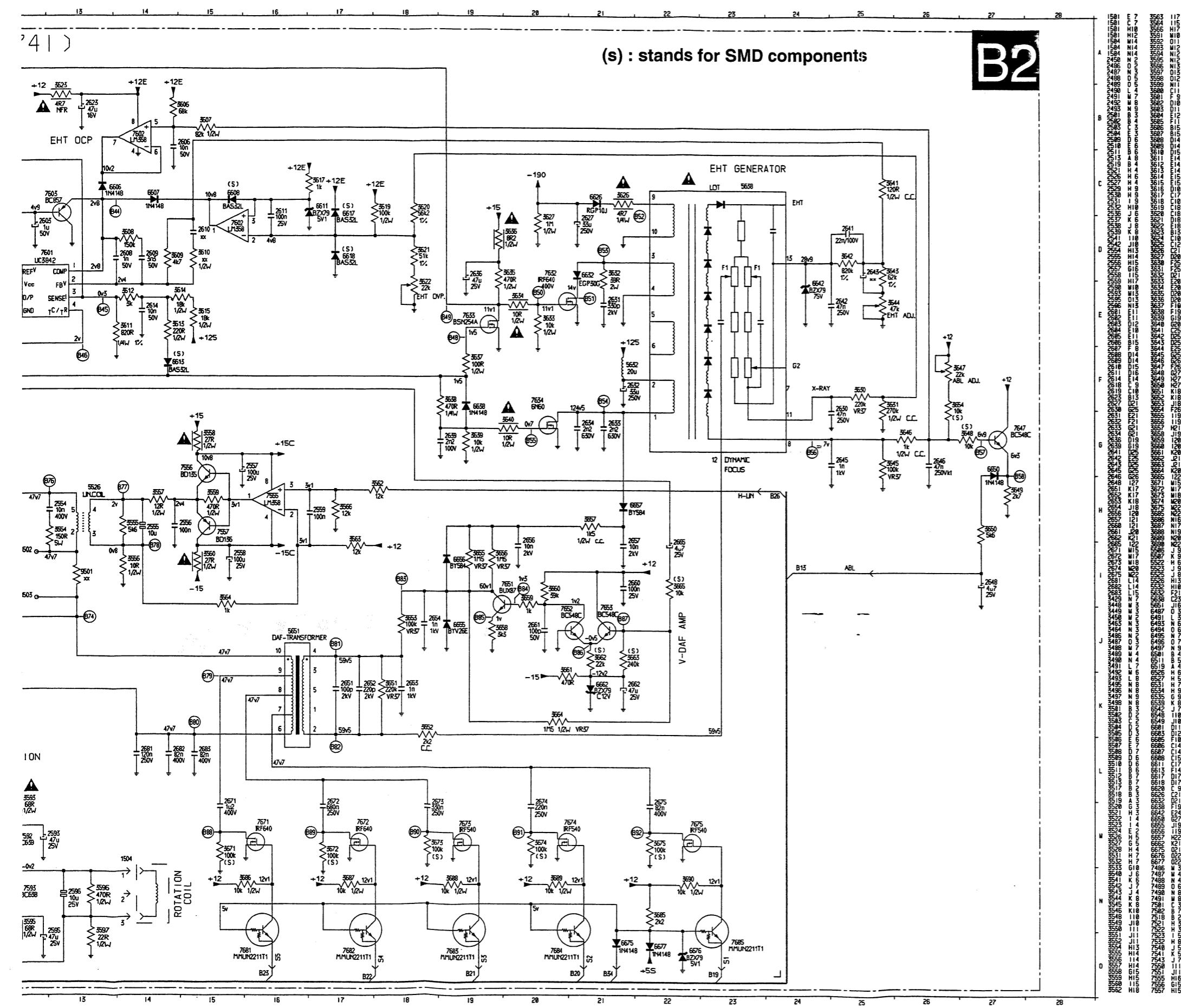


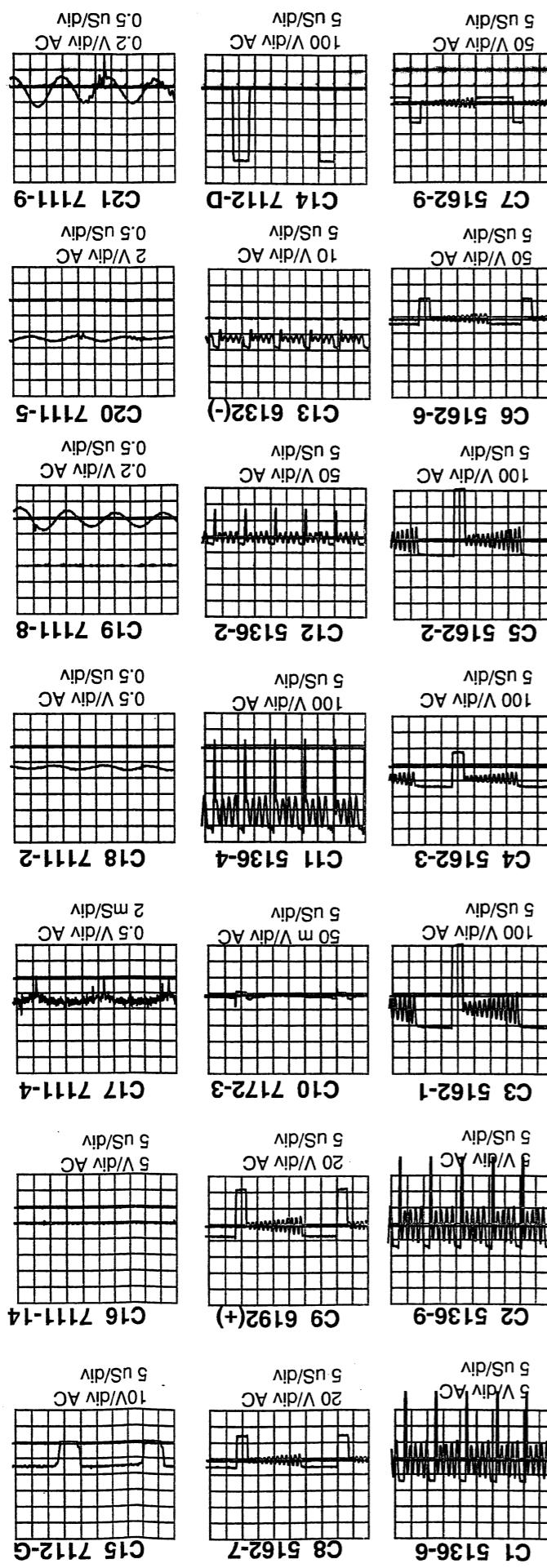
Waveforms for Diagram B2 and B3



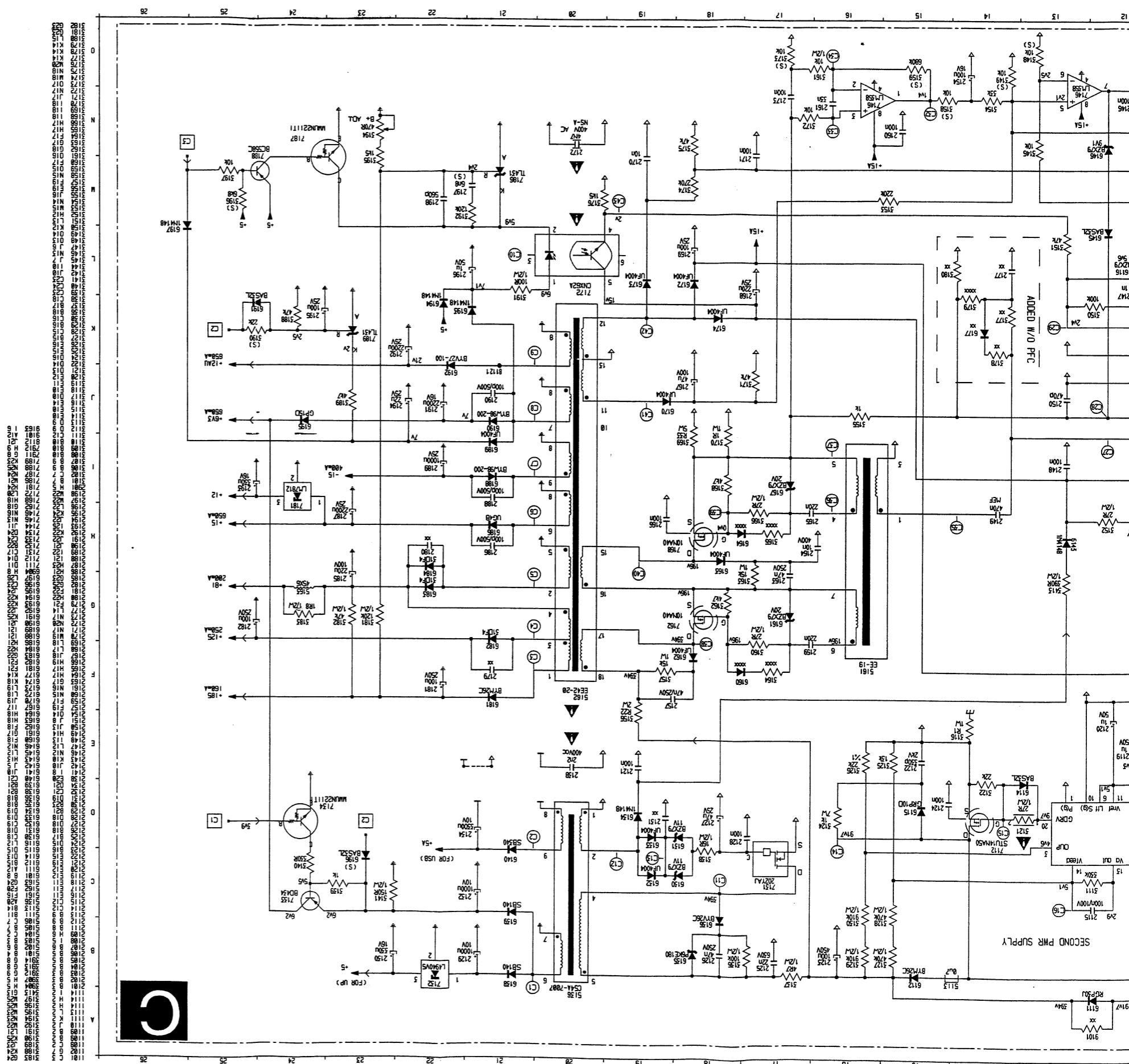
Deflection Schematic Diagram



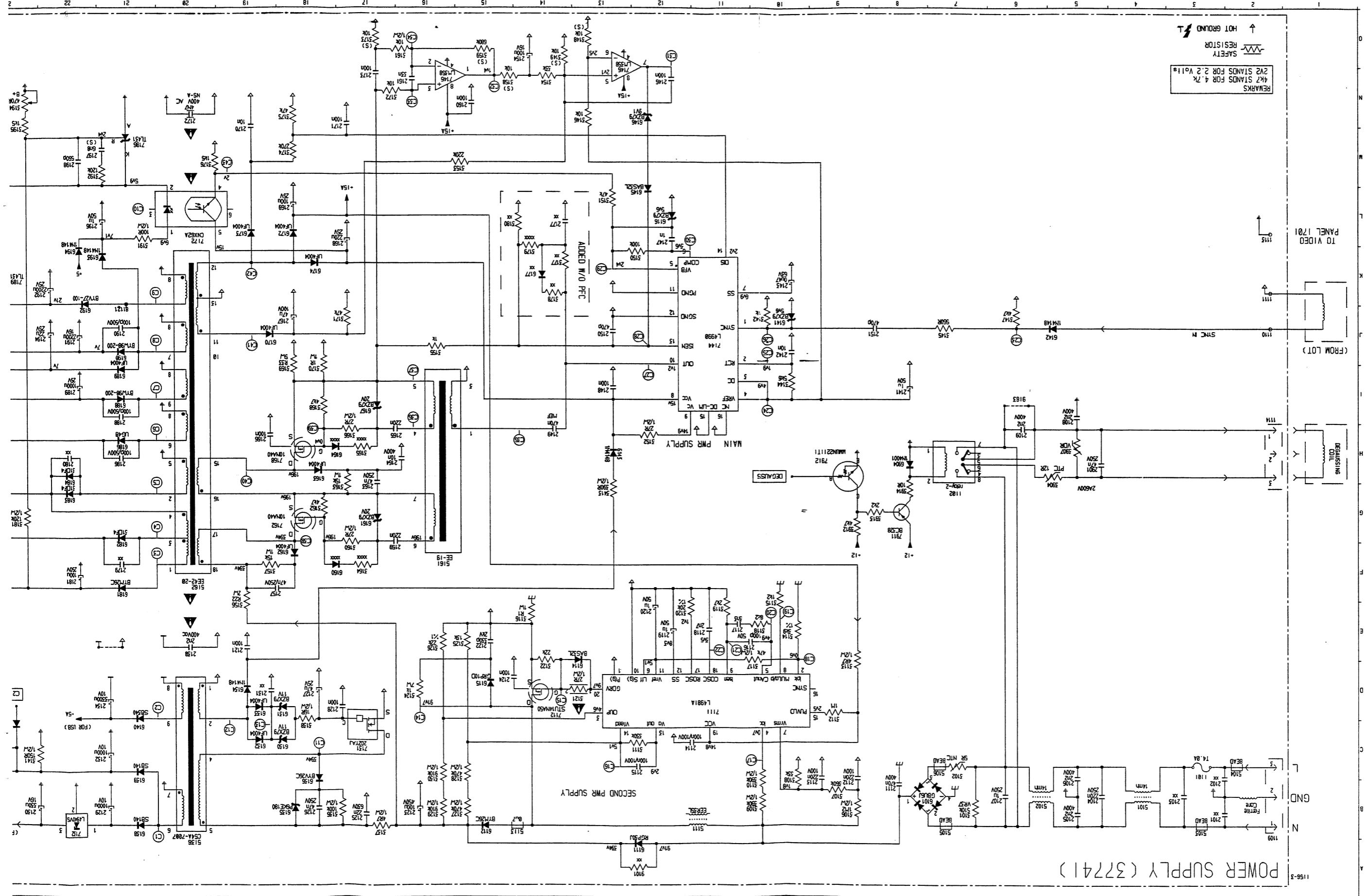




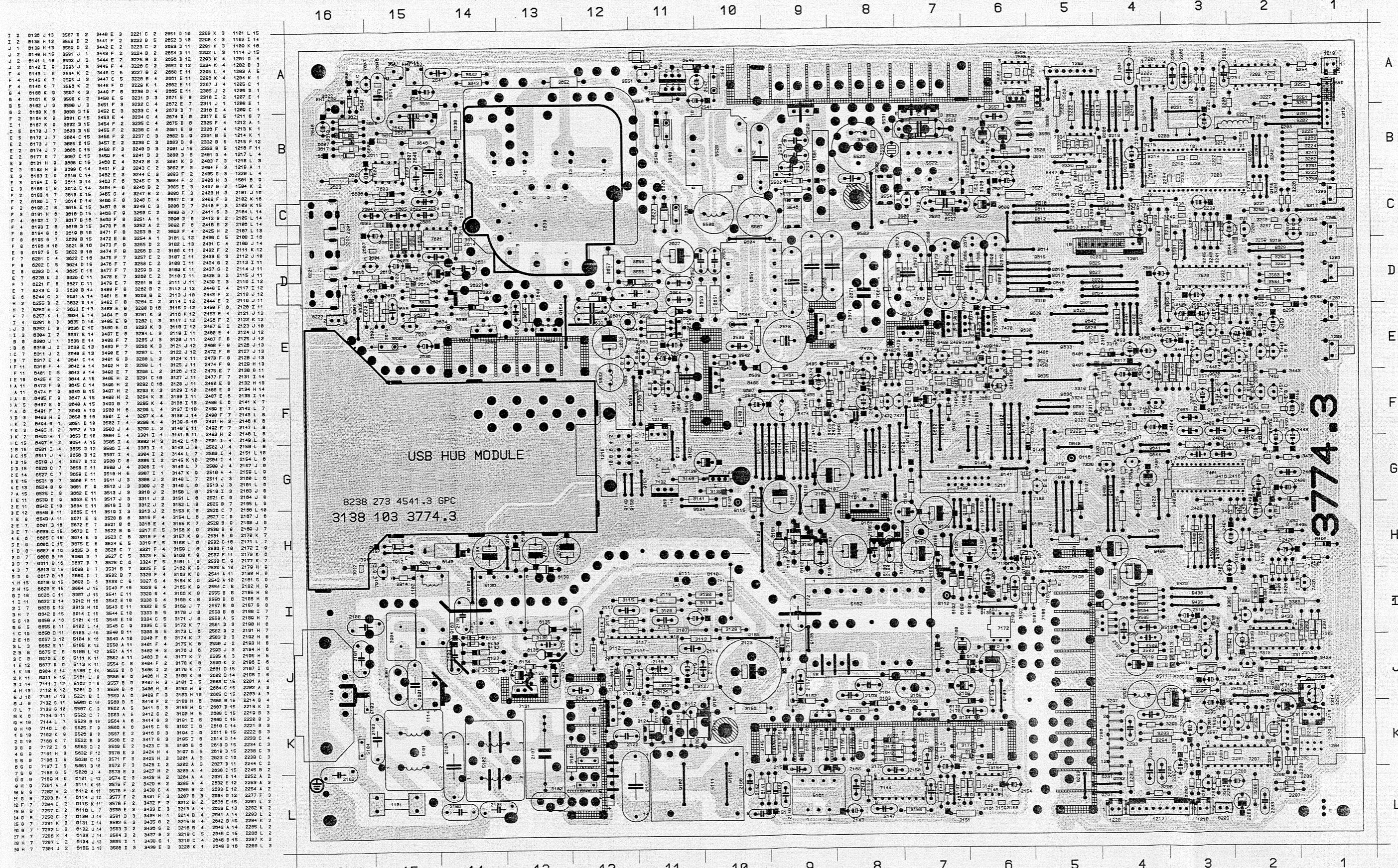
Waveforms for Diagram C

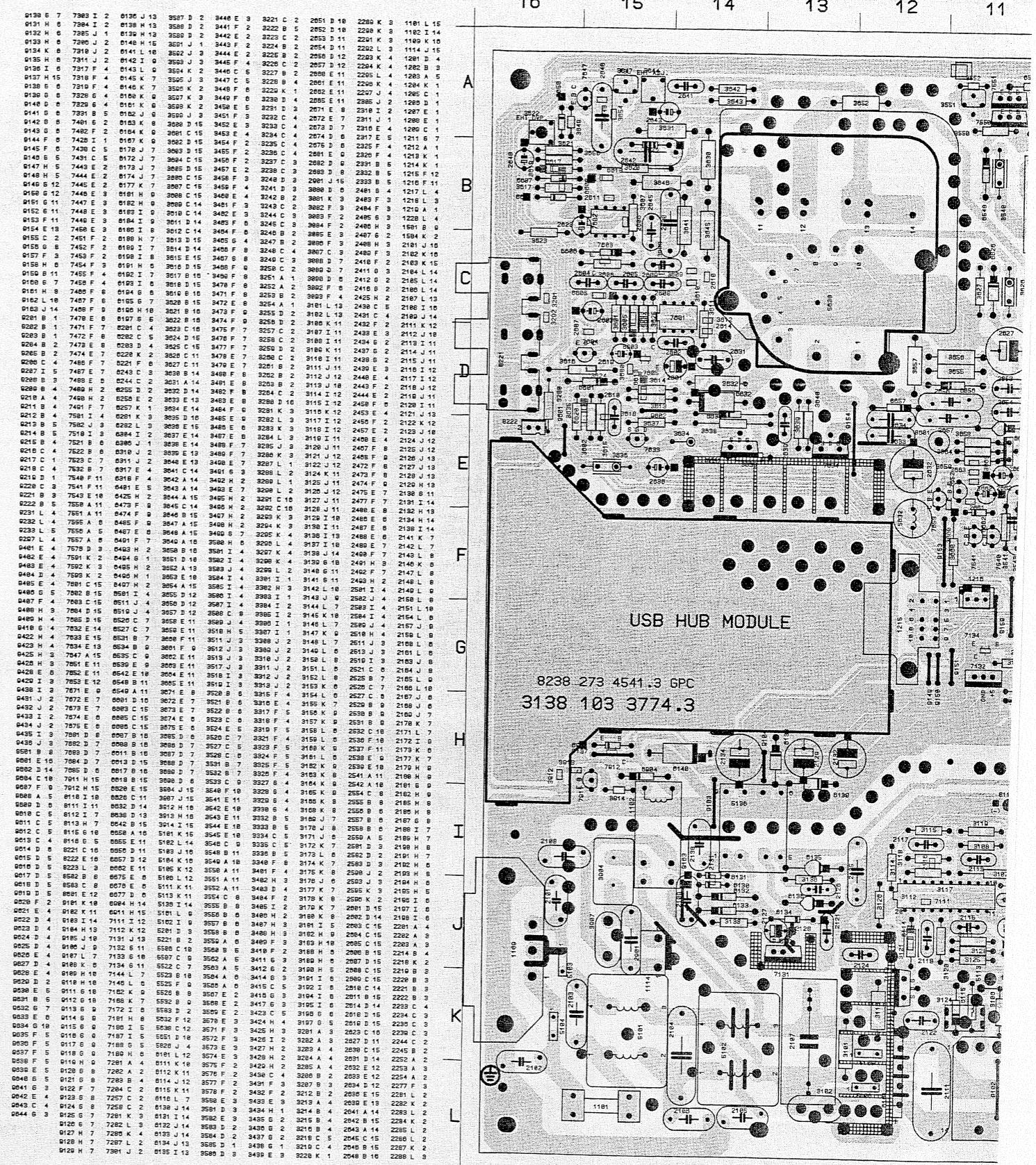
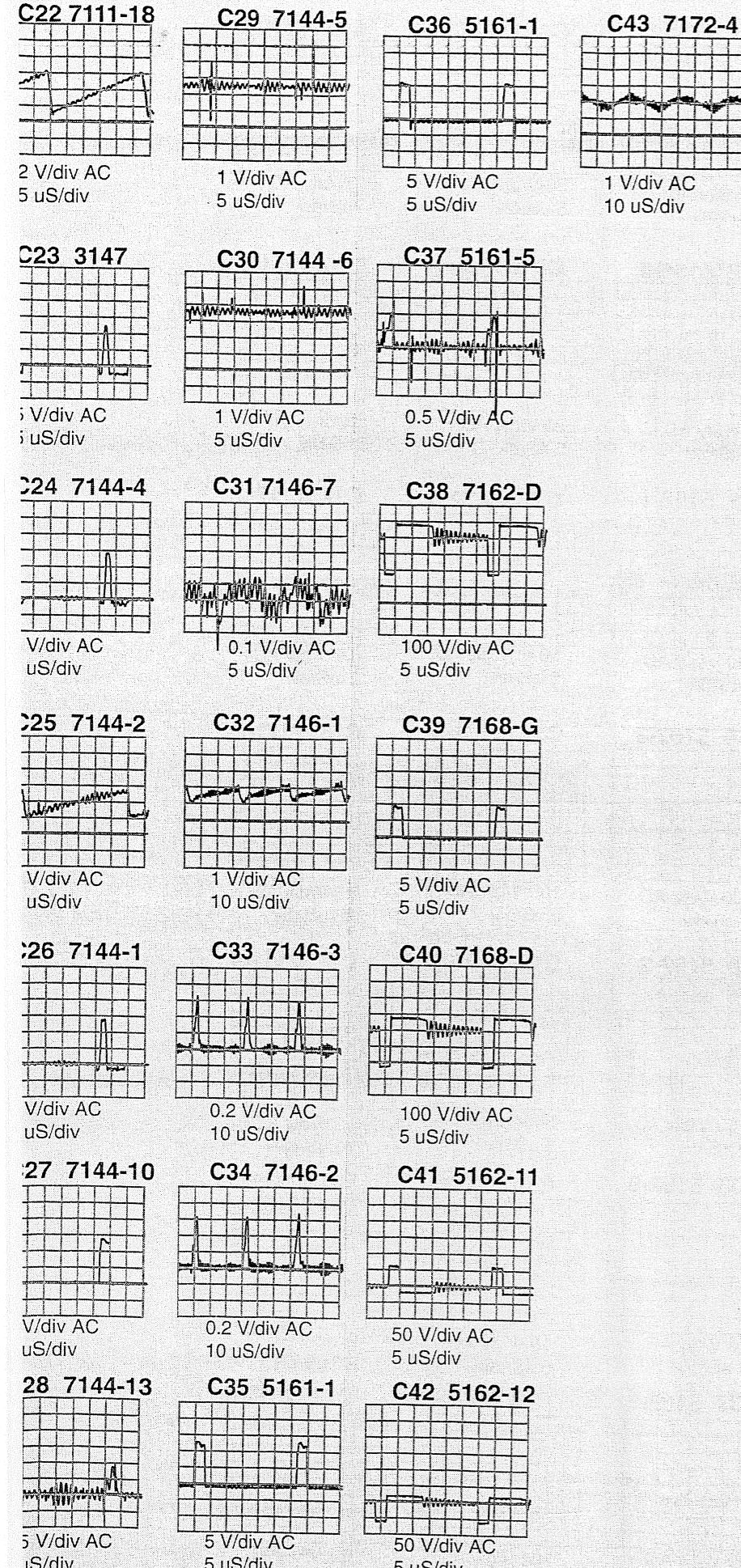


Power Supply Schematic Diagram



Main Panel C.B.A. (B1, B2, B3, C and D)





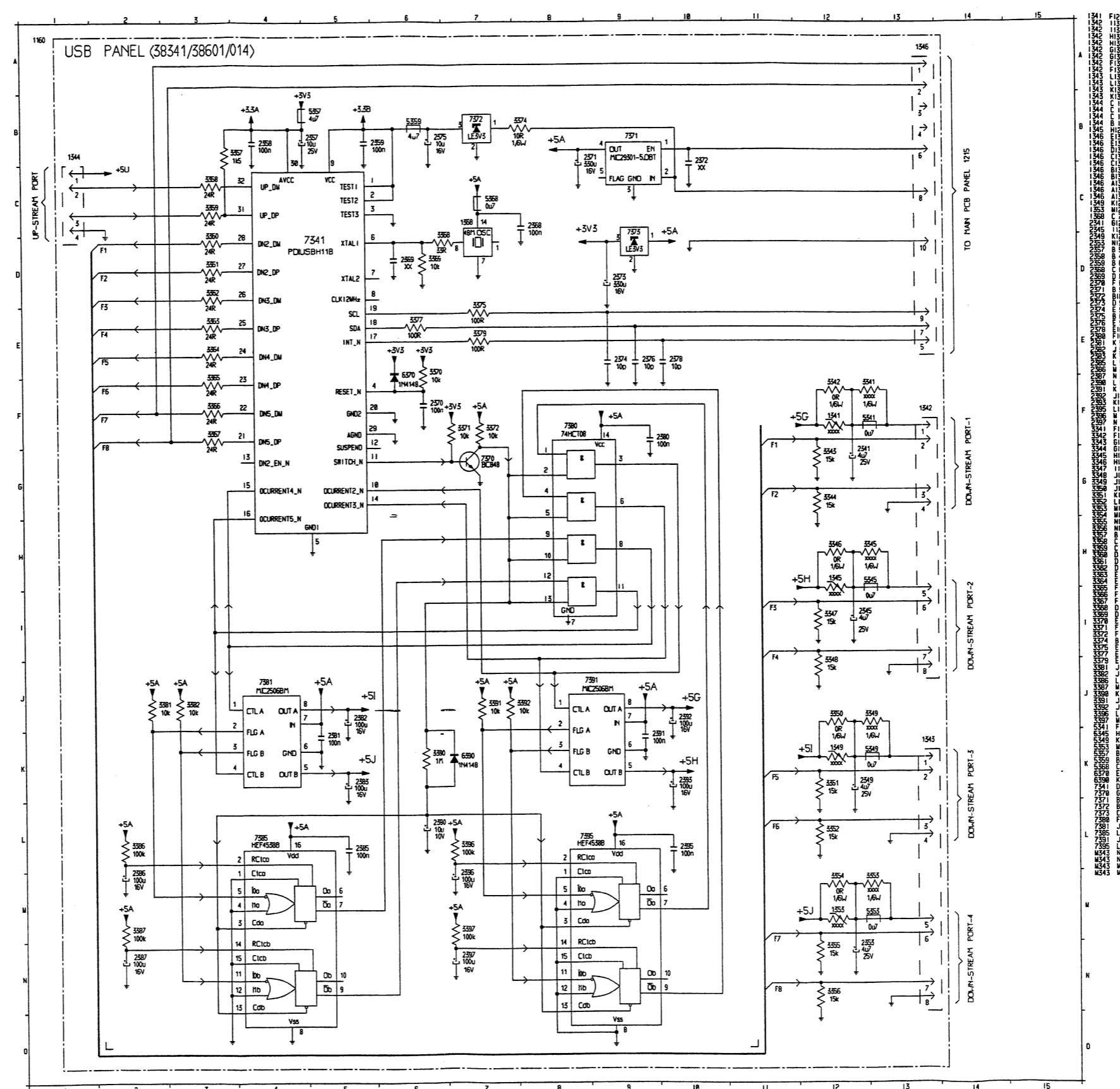
823.8 273 4541.3 GPC

USB Schematic Diagram (Optional)

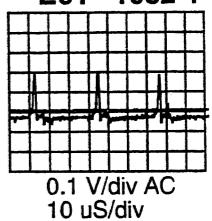
19A CM5800

25

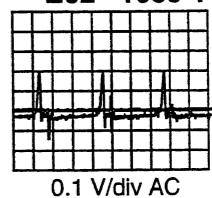
6



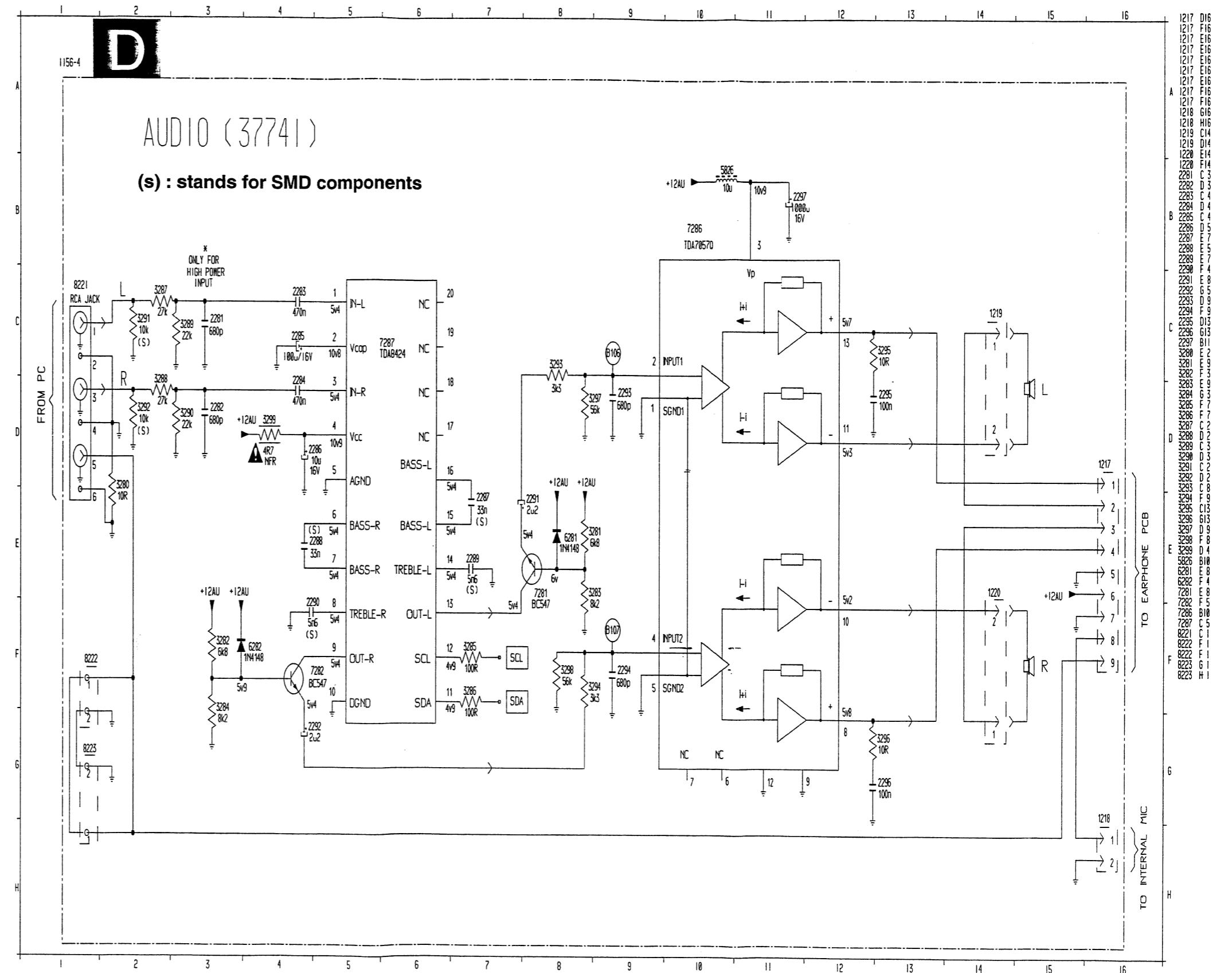
E01 1082-1



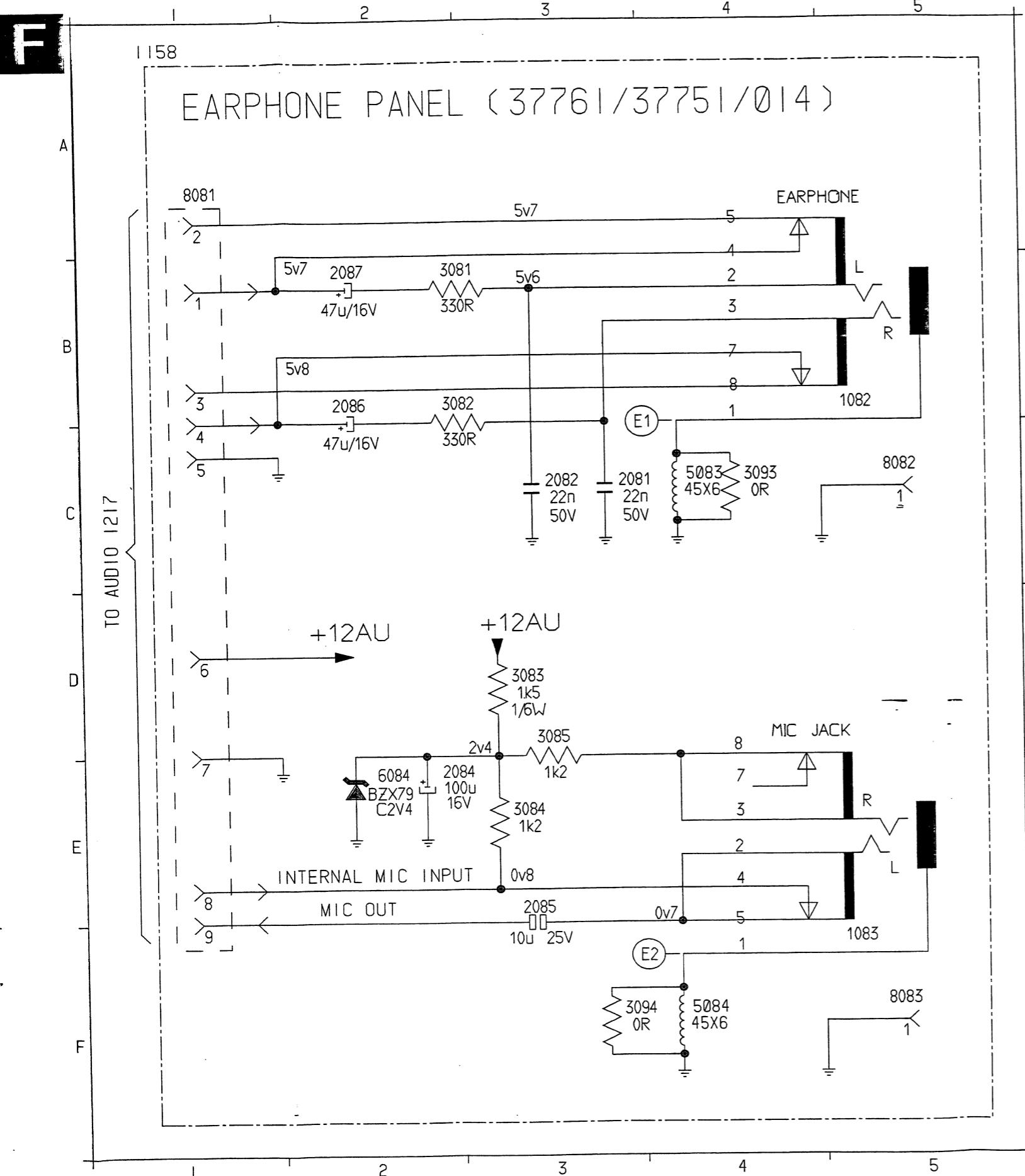
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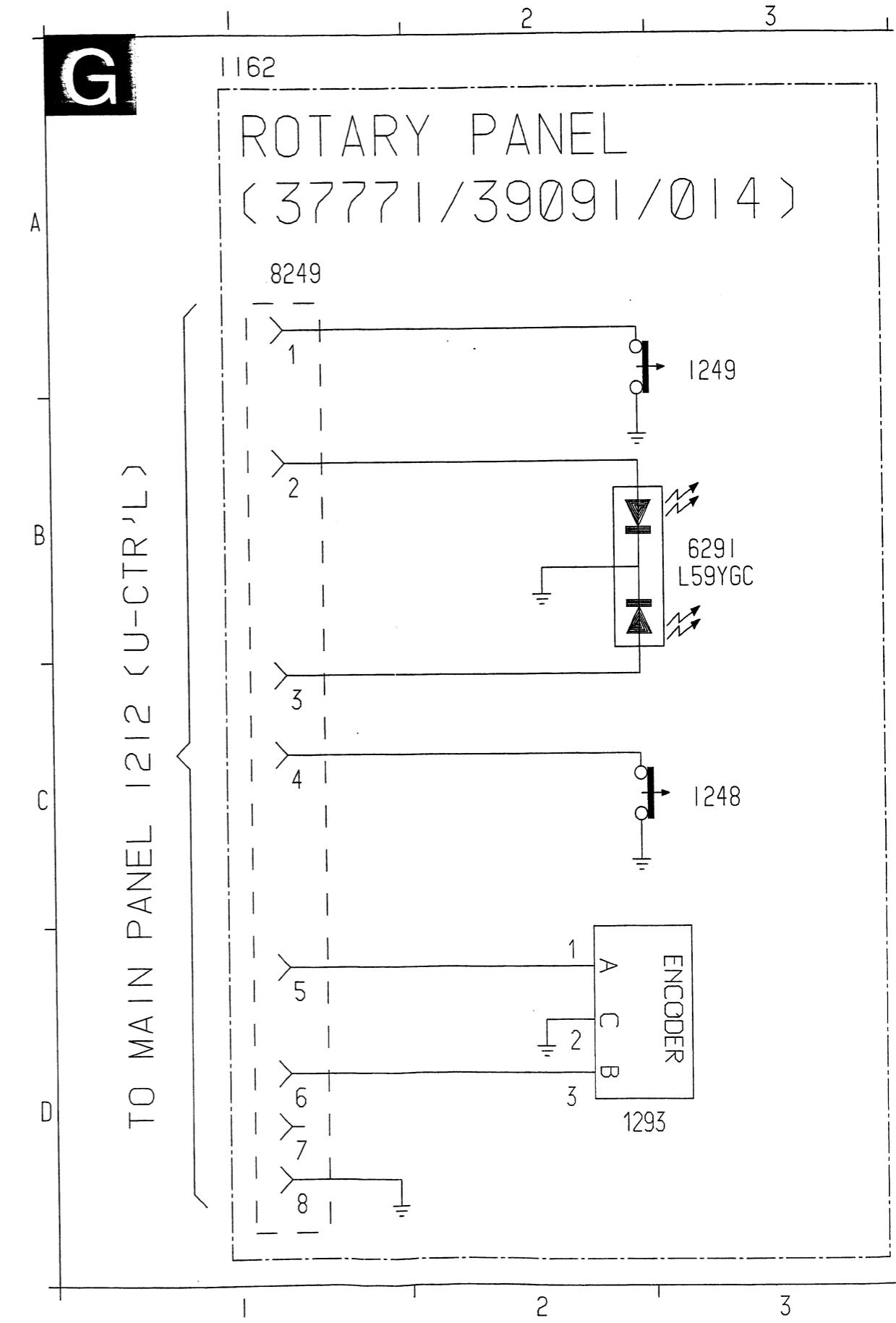
Audio Schematic Diagram



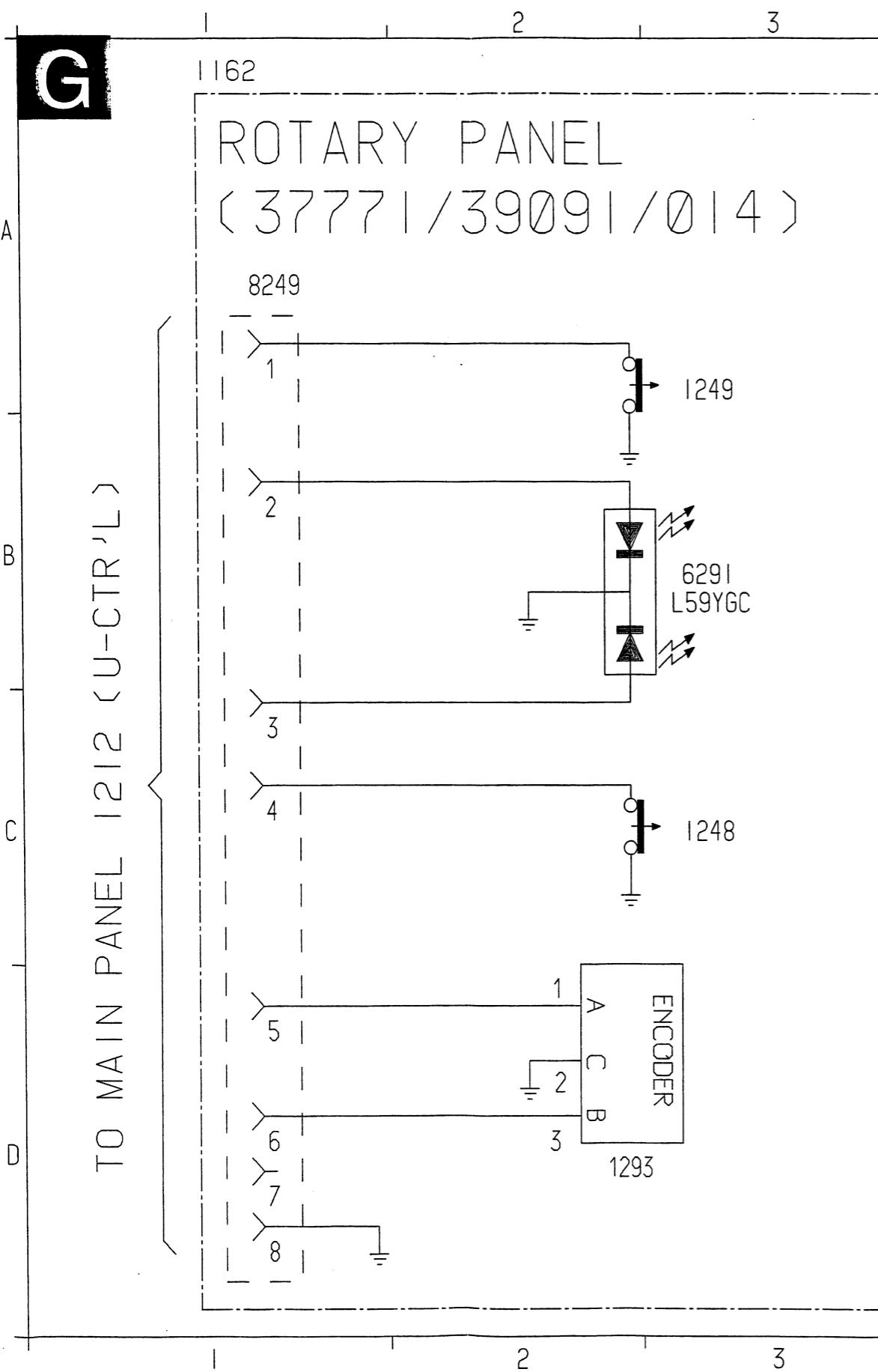
Earphone Schematic Diagram



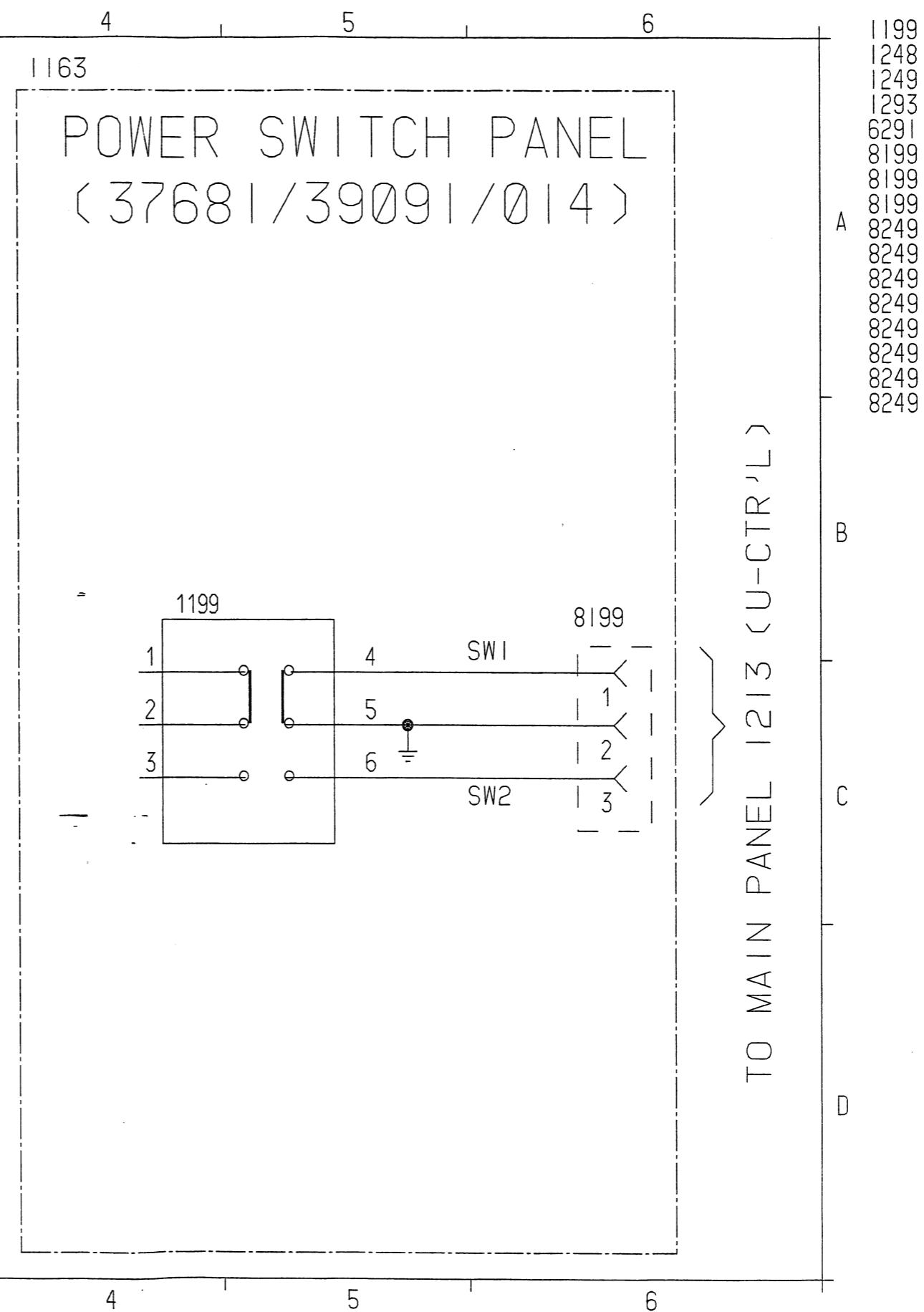
Rotary Schematic Diagram



Rotary Schematic Diagram



Power Switch Schematic Diagram

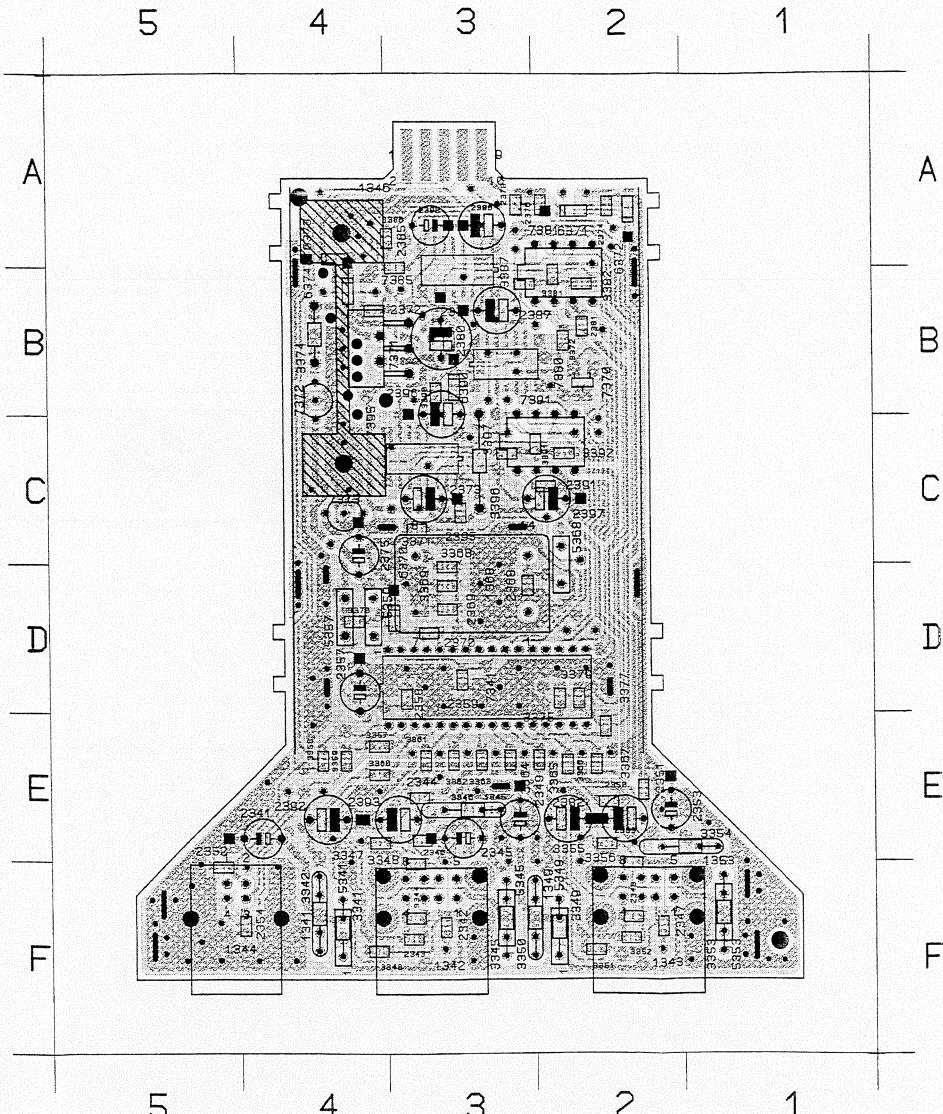


USB Panel C.B.A. (E)

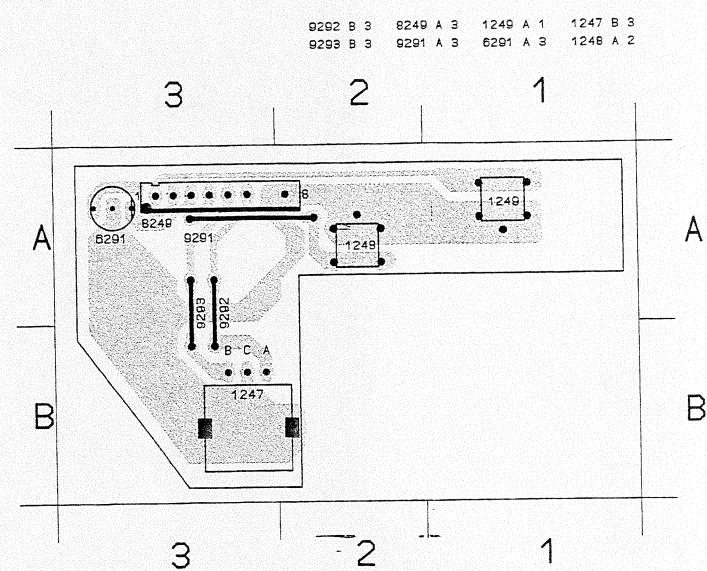
19ACM5800

27

1341 F 4
1342 F 3
1343 F 2
1344 F 5
1345 E 3
1346 A 3
1349 F 3
1353 E 2
1358 D 3
2341 E 4
2342 F 3
2343 F 3
2344 E 3
2345 E 3
2346 E 3
2347 F 2
2348 F 2
2349 E 3
2350 E 2
2351 E 2
2352 F 5
2353 E 2
2354 F 4
2357 D 4
2358 D 3
2359 D 3
2368 D 3
2369 D 3
2370 D 3
2371 B 3
2372 B 4
2373 C 3
2374 A 2
2375 D 4
2376 A 2
2378 A 3
2380 B 3
2381 B 2
2382 E 2
2383 E 2
2385 A 3
2386 A 3
2387 B 3
2390 A 3
2391 C 2
2392 E 4
2393 E 3
2395 C 3
2396 B 3
2397 C 3
3341 F 4
3342 F 4
3343 F 4
3344 F 3



Rotary Panel C.B.A. (G)



Repair tips

Warning

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the unit via a wrist wrap with resistance. Keep components and tools also at the same potential.

1. Servicing of SMDs (Surface Mounted Devices)

1.1 General cautions on handling and storage

- Oxidation on the terminals of SMDs results in poor soldering. Do not handle SMDs with bare hands.
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.
- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

1.2 Removal of SMDs

- Heat the solder (for 2-3 seconds) at each terminal of the chip. By using a solder wick and a slight horizontal force, small components can be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 4.1A)

DISMOUNTING

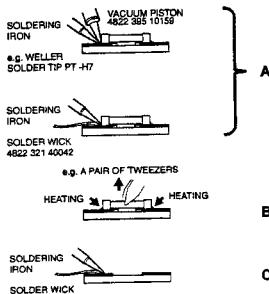


Fig. 4.1

- While holding the SMD with a pair of tweezers, take it off gently using the soldering iron's heat applied to each terminal (see Fig. 4.1 B).
- Remove the excess solder on the solder lands by means of a solder wick or a solder sucker (see Fig. 4.1C).

1.3 Caution on removal

- When handling the soldering iron, use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- The chip, once removed, must never be reused.

1.4 Attachment of SMDs

- Locate the SMD on the solder lands by means of tweezers and solder the component on one side. Ensure that the component is positioned correctly on the solder lands (see Fig. 4.2A).
- Next complete the soldering of the terminals of the component (see Fig. 4.2B).

MOUNTING

e.g. A PAIR OF TWEEZERS



A

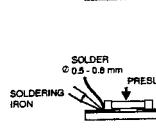


Fig. 4.2

2. Caution when attaching SMDs

- When soldering the SMD terminals, do not touch them directly with the soldering iron. The soldering should be done as quickly as possible, care must be taken to avoid damage to the terminals of the SMDs themselves.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used, but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional to the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 4.3).

EXAMPLES

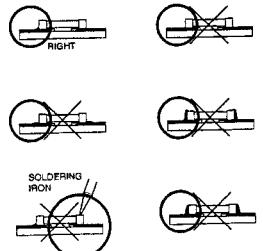
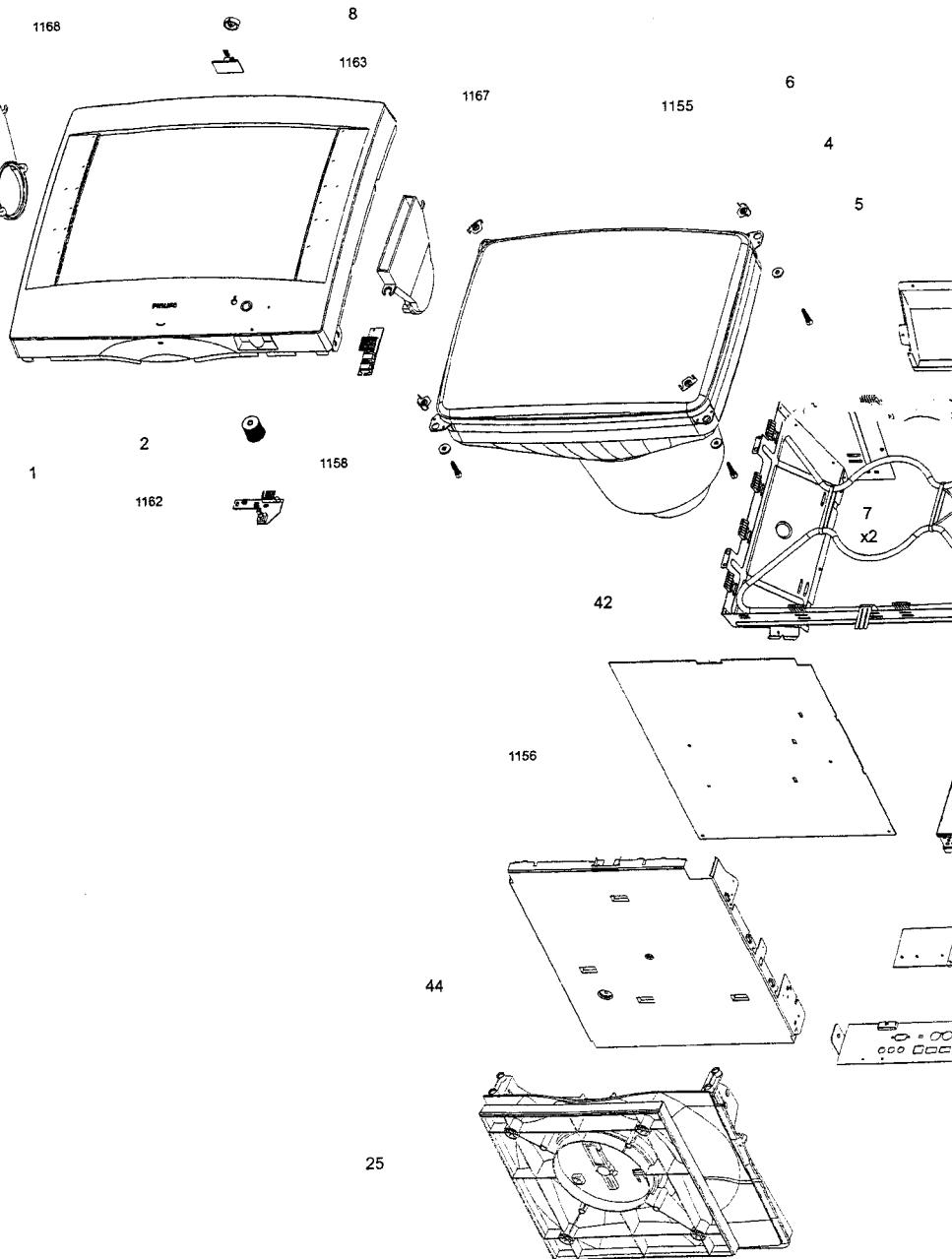
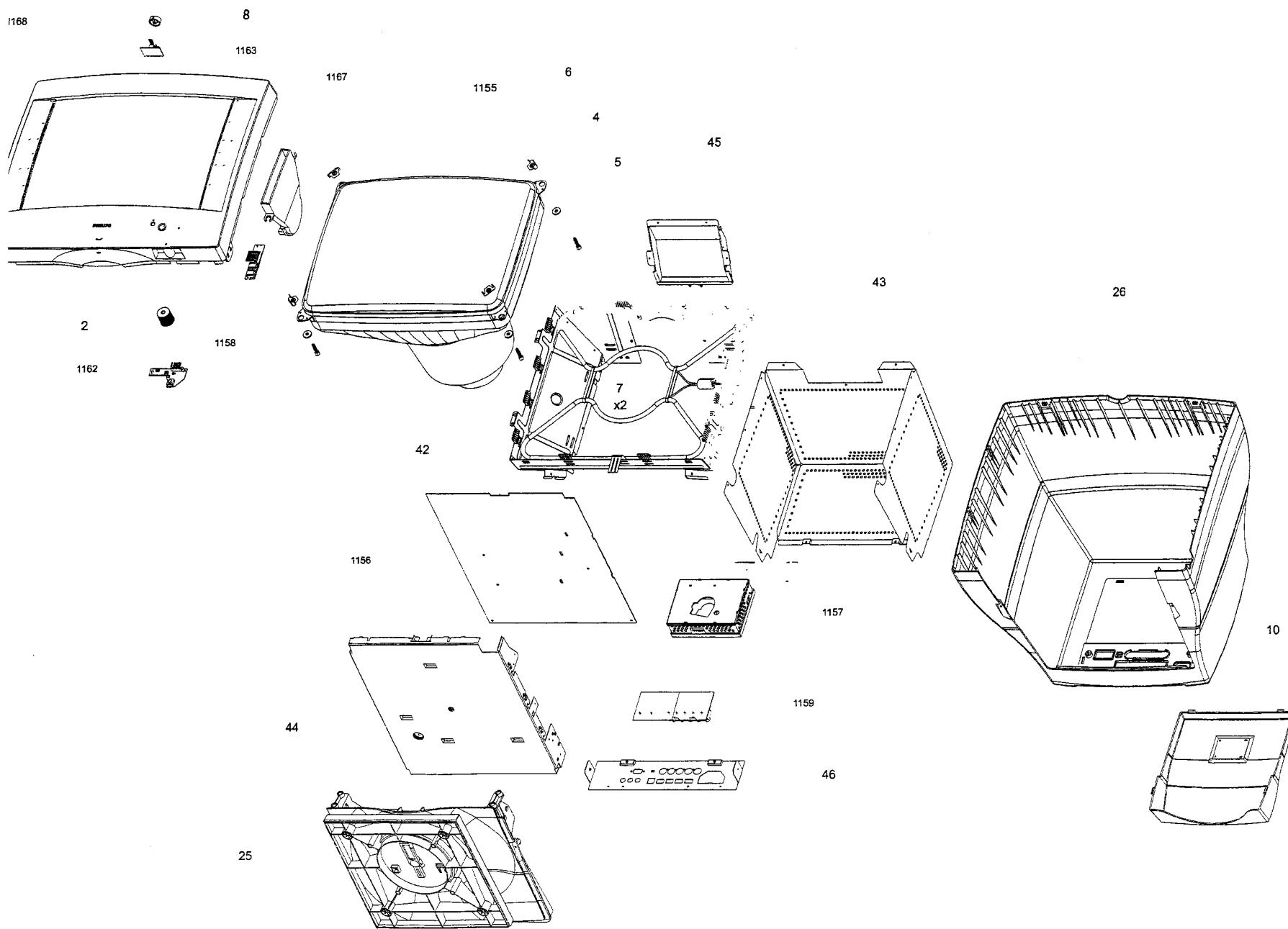


Fig. 4.3



Exploded View



Spare parts list

Parts indicated on
exploded view:
Model: 19A580BQ/74C

1	3138 107 94230	FRONT CABINET ASSY	11024 4822 280 70378	RELAY 2P 12V/60mA	2189 4822 124 11943	1000pF 20% 25V	2477 4822 124 23538	10μF 20% 50V
1108	3138 128 78430	OM-SS212 C.A. INLET ASSY	2190 4822 124 32899	100pF 10% 500V	2480 4822 124 80132	47μF 20% 25V		
1114	4822 265 30891	2 P.	2191 4822 124 81285	2200pF 20% 16V	2486 5332 122 35446	10pF 5% 50V		
1202	4822 242 10836	12.000.000 MHz	2192 4822 124 11942	330pF 20% 25V	2487 5332 122 38452	47pF 5% 63V		
1203	4822 267 10703	2P MALE	2193 4822 124 42024	330pF 20% 25V	2488 5322 125 10184	680pF 5% 50V		
1211	4822 267 10696	10P MALE (250Ω)	2195 4822 124 22669	10μF 20% 50V	2489 5322 125 10184	680pF 5% 50V		
1218	4822 267 10697	7P WAFER (65767)	2196 4822 124 22669	10μF 20% 50V	2490 4822 124 40207	100pF 20% 25V		
1212	4822 267 10698	3P MALE (611435)	2197 5322 122 31866	6.8nF 10% 63V	2491 4822 124 23539	10μF 20% 50V		
1213	4822 267 10698	3P MALE (611435)	2198 5322 122 32336	560pF 10% 100V	2492 5322 122 32654	22nF 10% 63V		
1215	4822 267 10704	8P FEMALE	2201 4822 124 43693	100pF 100V	2493 4822 124 42144	470μF 63V		
1217	4822 267 10699	9P WAFER (65767)	2202 5322 122 32143	22pF 100V	2501 4822 124 23236	100pF 20% 40V		
3138 104 38285	COKE		2203 5322 122 32658	22pF 5% 50V	2502 4822 124 22669	100pF 20% 40V		
3138 104 38300	ROTARY KNOB		2205 5322 122 32143	22pF 100V	2503 4822 124 14105	220pF 5% 50V		
3138 101 63935	CRT MOUNTING		2214 4822 124 23539	10μF 20% 50V	2504 4822 124 10726	22pF 5% 100V		
4	3138 101 63935	CRT WASHER	2215 4822 124 14105	100pF 100V	2505 4822 124 34513	100pF 100V		
5	3138 100 41190	SCREW-CRT (TAP TITE)	2216 4822 124 32669	33pF 5% 50V	2506 4822 124 42144	470μF 63V		
6	3138 101 64480	SCREW-CRT (WASHER)	2217 5322 122 32658	33pF 5% 50V	2507 4822 124 23539	10μF 20% 50V		
8	3138 104 38380	PLATE-CRT	2222 4822 124 33575	220pF 5% 50V	2508 4822 124 22669	100pF 20% 40V		
10	3138 107 94400	CASE COVER ASSY	2233 4822 124 23539	10μF 20% 50V	2509 4822 124 22669	100pF 20% 40V		
11	3138 104 38330	CABLE COVER	2234 4822 124 23539	10μF 20% 50V	2510 4822 124 22669	100pF 20% 40V		
25	3138 104 40990	NAME PLATE	2239 4822 124 28981	470μF 20% 16V	2511 4822 116 80653	560pF 5% 63V		
3138 107 48240	PEDESTAL ASSY		2244 4822 124 22695	10μF 16V	2512 4822 124 22669	100pF 20% 40V		
3138 104 39280	BOTTOM		2254 4822 124 13186	100pF 20% 50V	2513 4822 116 80653	560pF 5% 63V		
3138 104 38282	SLIDER		2255 4822 124 43693	220μF 100V	2514 4822 124 22669	100pF 20% 40V		
3138 104 39290	BASE - PEDESTAL		2256 4822 124 33177	10μF 20% 50V	2515 4822 124 22669	100pF 20% 40V		
26	3138 104 38270	BK2 COVER	2277 4822 124 34341	10μF 20% 50V	2516 4822 124 22669	100pF 20% 40V		
1155*	4822 131 11257	CRT	2281 5322 126 10184	680pF 5% 50V	2517 4822 124 13249	150pF 10% YSP		
27	4822 131 11257	CRT	2282 5322 126 10184	680pF 5% 50V	2518 4822 124 80334	100pF 20% 50V		
28	4822 131 11257	CRT	2283 4822 124 34913	470μF 10% 100V	2519 4822 124 22669	100pF 20% 40V		
29	4822 131 11257	CRT	2284 4822 124 22669	10μF 20% 50V	2520 4822 124 22669	100pF 20% 40V		
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32	4822 131 11257	CRT	2287 4822 124 22669	10μF 20% 50V	2523 4822 124 22669	100pF 20% 40V		
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35	4822 131 11257	CRT	2290 4822 124 22669	10μF 20% 50V	2526 4822 124 22669	100pF 20% 40V		
36	4822 131 11257	CRT	2291 4822 124 20727	2.2μF 20% 50V	2527 4822 124 22669	100pF 20% 40V		
37	4822 131 11257	CRT	2292 4822 124 40763	100nF 100V	2528 4822 124 22669	100pF 20% 40V		
38	4822 131 11257	CRT	2293 5322 126 32052	680pF 10% 100V	2529 4822 124 22669	100pF 20% 40V		
39	4822 131 11257	CRT	2294 5322 126 32025	680pF 10% 100V	2530 4822 124 22669	100pF 20% 40V		
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41	4822 131 11257	CRT	2296 4822 124 43693	100pF 100V	2532 4822 124 22669	100pF 20% 40V		
42	4822 131 11257	CRT	2297 4822 124 42172	100pF 16V	2533 4822 124 22669	100pF 20% 40V		
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72	4822 131 11257	CRT	2327 4822 124 22669	10μF 20% 50V	2563 4822 124 22669	100pF 20% 40V		
73	4822 131 11257	CRT	2328 4822 124 22669	10μF 20% 50V	2564 4822 124 22669	100pF 20% 40V		
74	4822 131 11257	CRT	2329 4822 124 22669	10μF 20% 50V	2565 4822 124 22669	100pF 20% 40V		
75	4822 131 11257	CRT	2330 4822 124 22669	10μF 20% 50V	2566 4822 124 22669	100pF 20% 40V		
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89	4822 131 11257	CRT	2					

Spare parts list

8905	4822 115 8687	68% 0.125	5525	4822 130 83812	BY459-1500	7466	4822 130 42513	BC858C			
8907	4822 117 12581	82% 5% 0.5W	5526	3138 128 78450	LINEARITY COIL IND FXD SP0305 A	6535	4822 130 34197	BZXT7-B12	7467	4822 130 42513	BC858C
8908	4822 051 20154	150% 5% 0.1W	5563	4822 152 20596	4U7 PM10 B	6539	4822 130 11114	BYM26B	7468	4822 130 10623	MUN2211J
8909	4822 051 20472	4K 7% 0.1W	5632	4822 157 71372	CHOCK COIL 20uH	6542	4822 130 30621	IN1418	7471	5322 130 60608	BC558C
8911	4822 117 12582	8200% 1%	5638	3138 128 78766	LINNE OUTPUT TRANSFORMER	6548	4822 130 31607	RGP10D	7472	4822 130 10623	MUN2211J
8912	4822 051 20302	3K 5% 0.1W	5658	3138 128 78766	DAF	6549	4822 130 31607	RGP10D	7473	4822 130 11723	BP422
8913	4822 050 22220	2203 1% 0.6W	5651	4822 145 10738	TRANSFORMER	6550	4822 130 30621	IN1418	7488	4822 130 86234	NE5532N
8914	4822 050 21803	18K 1% 0.6W	5826	4822 157 63218	DRUL COIL 10 mH	6551	4822 130 30621	IN1418	7497	5322 130 60608	BC558C
8915	4822 050 21803	18K 1% 0.6W	6605	4822 130 30446	BA532L	6557	4822 130 30621	IN1418	7501	5322 209 90008	TDAB177
8916	4822 050 21003	10K 1% 0.6W	6606	4822 130 30362	BA532L	6560	4822 130 30446	BA532L	7501	4822 492 62076	FOR
8917	4822 050 11002	1K 1% 0.4W	6607	4822 130 30521	IN1418	6611	4822 130 30446	BZXT9-B5V1	6532	4822 130 11159	TRANSISTORS
8918	4822 117 10834	47K 1% 0.1W	6608	4822 130 30446	BA532L	6611	4822 130 30446	BA532L	6611	4822 130 30446	PLATE
8919	4822 050 21004	10K 1% 0.6W	6610	4822 130 10741	GBU6J	6612	4822 130 30446	BA532L	5322 390 2001	VET SILIC.P4	
8920	4822 050 25103	51K 1% 0.6W	6611	4822 130 80572	RGP10J	6613	4822 130 30446	BA532L	5322 492 62076	TRANSISTORS	
8922	4822 100 11213	22K 30%K 0.1W	6612	5322 130 30621	BA532L	6614	4822 130 30446	BA532L	5322 492 11042	PLATE	
8923	4822 052 10474	407 5% 0.33W	6615	4822 130 31607	RGP10D	6615	4822 130 30446	BA532L	5322 492 11042	20GR	
8924	4822 051 20102	1K 5% 0.1W	6616	4822 130 34317	BZXT9-B5V6	6616	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8925	4822 050 22202	24K 1% 0.6W	6617	4822 130 30621	IN1418	6617	4822 130 30446	BA532L	5322 492 11042	PLATE	
8926	4822 050 16748	407 5% 0.33W	6618	4822 130 30621	IN1418	6618	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8927	4822 050 21005	1M 1% 0.6W	6619	4822 130 34488	BZXT9-B11	6619	4822 130 30446	BA532L	5322 492 11042	PLATE	
8928	4822 053 21224	220K 5% 0.5W	6620	4822 130 34488	BZXT9-B11	6620	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8929	4822 117 11111	27K 5% 0.5W	6621	4822 130 10742	UFO404	6621	4822 130 30446	BA532L	5322 492 11042	PLATE	
8930	4822 117 11111	27K 5% 0.5W	6622	4822 130 30621	IN1418	6622	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8931	4822 117 11111	27K 5% 0.5W	6623	4822 130 30621	IN1418	6623	4822 130 30446	BA532L	5322 492 11042	PLATE	
8932	4822 117 11111	27K 5% 0.5W	6624	4822 130 30621	IN1418	6624	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8933	4822 117 11111	27K 5% 0.5W	6625	4822 130 30621	IN1418	6625	4822 130 30446	BA532L	5322 492 11042	PLATE	
8934	4822 117 11111	27K 5% 0.5W	6626	4822 130 30621	IN1418	6626	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8935	4822 117 11111	27K 5% 0.5W	6627	4822 130 30621	IN1418	6627	4822 130 30446	BA532L	5322 492 11042	PLATE	
8936	4822 117 11111	27K 5% 0.5W	6628	4822 130 30621	IN1418	6628	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8937	4822 117 11111	27K 5% 0.5W	6629	4822 130 30621	IN1418	6629	4822 130 30446	BA532L	5322 492 11042	PLATE	
8938	4822 117 11111	27K 5% 0.5W	6630	4822 130 30621	IN1418	6630	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8939	4822 117 11111	27K 5% 0.5W	6631	4822 130 30621	IN1418	6631	4822 130 30446	BA532L	5322 492 11042	PLATE	
8940	4822 117 11111	27K 5% 0.5W	6632	4822 130 30621	IN1418	6632	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8941	4822 117 11111	27K 5% 0.5W	6633	4822 130 30621	IN1418	6633	4822 130 30446	BA532L	5322 492 11042	PLATE	
8942	4822 117 11111	27K 5% 0.5W	6634	4822 130 30621	IN1418	6634	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8943	4822 117 11111	27K 5% 0.5W	6635	4822 130 30621	IN1418	6635	4822 130 30446	BA532L	5322 492 11042	PLATE	
8944	4822 117 11111	27K 5% 0.5W	6636	4822 130 30621	IN1418	6636	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8945	4822 117 11111	27K 5% 0.5W	6637	4822 130 30621	IN1418	6637	4822 130 30446	BA532L	5322 492 11042	PLATE	
8946	4822 117 11111	27K 5% 0.5W	6638	4822 130 30621	IN1418	6638	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8947	4822 117 11111	27K 5% 0.5W	6639	4822 130 30621	IN1418	6639	4822 130 30446	BA532L	5322 492 11042	PLATE	
8948	4822 117 11111	27K 5% 0.5W	6640	4822 130 30621	IN1418	6640	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8949	4822 117 11111	27K 5% 0.5W	6641	4822 130 30621	IN1418	6641	4822 130 30446	BA532L	5322 492 11042	PLATE	
8950	4822 117 11111	27K 5% 0.5W	6642	4822 130 30621	IN1418	6642	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8951	4822 117 11111	27K 5% 0.5W	6643	4822 130 30621	IN1418	6643	4822 130 30446	BA532L	5322 492 11042	PLATE	
8952	4822 117 11111	27K 5% 0.5W	6644	4822 130 30621	IN1418	6644	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8953	4822 117 11111	27K 5% 0.5W	6645	4822 130 30621	IN1418	6645	4822 130 30446	BA532L	5322 492 11042	PLATE	
8954	4822 117 11111	27K 5% 0.5W	6646	4822 130 30621	IN1418	6646	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8955	4822 117 11111	27K 5% 0.5W	6647	4822 130 30621	IN1418	6647	4822 130 30446	BA532L	5322 492 11042	PLATE	
8956	4822 117 11111	27K 5% 0.5W	6648	4822 130 30621	IN1418	6648	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8957	4822 117 11111	27K 5% 0.5W	6649	4822 130 30621	IN1418	6649	4822 130 30446	BA532L	5322 492 11042	PLATE	
8958	4822 117 11111	27K 5% 0.5W	6650	4822 130 30621	IN1418	6650	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8959	4822 117 11111	27K 5% 0.5W	6651	4822 130 30621	IN1418	6651	4822 130 30446	BA532L	5322 492 11042	PLATE	
8960	4822 117 11111	27K 5% 0.5W	6652	4822 130 30621	IN1418	6652	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8961	4822 117 11111	27K 5% 0.5W	6653	4822 130 30621	IN1418	6653	4822 130 30446	BA532L	5322 492 11042	PLATE	
8962	4822 117 11111	27K 5% 0.5W	6654	4822 130 30621	IN1418	6654	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8963	4822 117 11111	27K 5% 0.5W	6655	4822 130 30621	IN1418	6655	4822 130 30446	BA532L	5322 492 11042	PLATE	
8964	4822 117 11111	27K 5% 0.5W	6656	4822 130 30621	IN1418	6656	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8965	4822 117 11111	27K 5% 0.5W	6657	4822 130 30621	IN1418	6657	4822 130 30446	BA532L	5322 492 11042	PLATE	
8966	4822 117 11111	27K 5% 0.5W	6658	4822 130 30621	IN1418	6658	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8967	4822 117 11111	27K 5% 0.5W	6659	4822 130 30621	IN1418	6659	4822 130 30446	BA532L	5322 492 11042	PLATE	
8968	4822 117 11111	27K 5% 0.5W	6660	4822 130 30621	IN1418	6660	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8969	4822 117 11111	27K 5% 0.5W	6661	4822 130 30621	IN1418	6661	4822 130 30446	BA532L	5322 492 11042	PLATE	
8970	4822 117 11237	1M 1A100V	6662	4822 130 30621	IN1418	6662	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8971	4822 051 20472	4K 7% 0.1W	6663	4822 130 30621	IN1418	6663	4822 130 30446	BA532L	5322 492 11042	PLATE	
8972	4822 117 11144	2K 1% 0.1W	6664	4822 130 30621	IN1418	6664	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8973	4822 117 11144	2K 1% 0.1W	6665	4822 130 30621	IN1418	6665	4822 130 30446	BA532L	5322 492 11042	PLATE	
8974	4822 117 11144	2K 1% 0.1W	6666	4822 130 30621	IN1418	6666	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8975	4822 117 11144	2K 1% 0.1W	6667	4822 130 30621	IN1418	6667	4822 130 30446	BA532L	5322 492 11042	PLATE	
8976	4822 117 11144	2K 1% 0.1W	6668	4822 130 30621	IN1418	6668	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8977	4822 117 11144	2K 1% 0.1W	6669	4822 130 30621	IN1418	6669	4822 130 30446	BA532L	5322 492 11042	PLATE	
8978	4822 117 11144	2K 1% 0.1W	6670	4822 130 30621	IN1418	6670	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8979	4822 117 11144	2K 1% 0.1W	6671	4822 130 30621	IN1418	6671	4822 130 30446	BA532L	5322 492 11042	PLATE	
8980	4822 117 11144	2K 1% 0.1W	6672	4822 130 30621	IN1418	6672	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8981	4822 117 11144	2K 1% 0.1W	6673	4822 130 30621	IN1418	6673	4822 130 30446	BA532L	5322 492 11042	PLATE	
8982	4822 117 11144	2K 1% 0.1W	6674	4822 130 30621	IN1418	6674	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8983	4822 117 11144	2K 1% 0.1W	6675	4822 130 30621	IN1418	6675	4822 130 30446	BA532L	5322 492 11042	PLATE	
8984	4822 117 11144	2K 1% 0.1W	6676	4822 130 30621	IN1418	6676	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	
8985	4822 117 11144	2K 1% 0.1W	6677	4822 130 30621	IN1418	6677	4822 130 30446	BA532L	5322 492 11042	PLATE	
8986	4822 117 11144	2K 1% 0.1W	6678	4822 130 30621	IN1418	6678	4822 130 30446	BA532L	5322 492 11042	TRANSISTORS	

1157 Video panel

Varic

1157	3138 128 62460	VIDEO PCB ASSY
	4822 701 20292	TAPPING SCREW
		WITH WASHER
	4822 701 20292	TAPPING SCREW
		WITH WASHER

Spare parts list

5322 390 20011	VET SJ1JC.P4	2KV	3788 4822 117 10833	10K 1% 0.1W	1158 3138 128 59270	EARPHONE PCB ASSY	
3138 128 78420	CRT SOCKET	20GR	3789 4822 117 10834	47K 1% 0.1W	1032 4822 267 31526	CON BM PHONE	
		2774 4822 126 14102	10nf 20% 2KV	220 5% 0.1W		H 01P F 3.5 ST B	
		2776 4822 126 13196	CER2 SMD 25V	3790 4822 051 20229		CON BM PHONE	
		100N PM10 R	3791 4822 050 13302	3K 3% 0.4W		H 01P F 3.5 ST B	
-II-		2777 4822 252 60127	DSP-201M-C04F				
		2778 4822 122 33177	10nf 20% 50V	3792 4822 117 11139	1K 1% 0.1W		
		2779 4822 252 60127	DSP-201M-C04F	3793 4822 051 20101	1K 1% 0.1W		
		2780 4822 252 60127	DSP-201M-C04F	3794 4822 051 20581	5600 5% 0.1W		
1702 4822 265 41419	6P	2781 4822 122 33177	10nf 20% 50V	3795 4822 051 20582	1K 5% 0.1W		
1705 4822 267 10702	14P MALE	2782 4822 124 40201	1000uF 20% 16V	3797 4822 051 20332	3K 3% 0.1W		
(53461B)		2783 4822 124 40201	1000uF 20% 16V	3798 4822 051 20102	1K 5% 0.1W		
1706 4822 255 10379	HP50720-011100	2784 4822 126 13196	CER2 SMD 25V	3799 4822 051 20101	1003 5% 0.1W		
		100N PM10 R	3800 4822 051 20479	47Q 5% 0.1W			
-II-		2785 4822 126 13196	CER2 SMD 25V	3801 4822 051 20101	1000 5% 0.1W		
		100N PM10 R	3802 4822 051 20101	1000 5% 0.1W			
		2786 4822 126 13196	CER2 SMD 25V	3803 4822 116 82779	407 5% 16W		
		100N PM10 R	3804 4822 051 20102	1K 5% 0.1W			
		2787 4822 126 13196	CER2 SMD 25V	3805 4822 051 20102	1K 5% 0.1W		
		100N PM10 R	3806 4822 051 20102	1K 5% 0.1W			
2703 4822 126 13196	10nf 5% 50V	2788 4822 126 13196	CER2 SMD 25V	3807 4822 051 20102	1K 5% 0.1W		
		100N PM10 R	3808 4822 051 20102	1K 5% 0.1W			
2704 4822 126 13196	CER2 SMD 25V	2789 4822 126 13196	CER2 SMD 25V	3811 4822 050 21502	1K 1% 0.6W		
		100N PM10 R	3812 4822 116 80548	15K 5% 0.5W			
2707 4822 126 13196	CER2 SMD 25V	2791 5322 124 40641	10uF 20% 100V	3814 4822 117 10353	1503 1% 0.1W		
		100N PM10 R	2792 5322 124 40641	10uF 20% 100V	3815 4822 051 20101	1002 5% 0.1W	
2708 4822 126 13196	CER2 SMD 25V	2793 5322 124 40641	10uF 20% 100V	3816 4822 051 20271	270Q 5% 0.1W		
		100N PM10 R	3829 4822 051 20101	1002 5% 0.1W			
2709 4822 126 13196	CER2 SMD 25V	2794 5322 124 40641	10uF 20% 100V	3831 4822 051 20101	1002 5% 0.1W		
		100N PM10 R	3832 4822 051 20101	1002 5% 0.1W			
2711 4822 126 13196	CER2 SMD 25V						
		100N PM10 R					
2712 4822 122 33216	270pF 5% 50V	3701 4822 051 20758	75Q 5% 0.1W				
2713 4822 126 13196	CER2 SMD 25V	3702 4822 051 20759	75Q 5% 0.1W				
		100N PM10 R	3703 4822 051 20759	75Q 5% 0.1W			
2714 4822 124 42171	22uF 25V	3712 4822 051 20471	47Q 5% 0.1W				
2715 4822 122 32504	15pF 2% 63V	3713 4822 051 20471	47Q 5% 0.1W				
2716 4822 126 13196	CER2 SMD 25V	3714 4822 051 20471	47Q 5% 0.1W				
		100N PM10 R	3715 4822 051 20471	47Q 5% 0.1W			
2718 5322 126 22036	50pF 5% 50V	3716 4822 117 11503	22Q 1% 0.1W				
2720 5322 126 22448	10pF 5% 50V	3717 4822 117 11503	22Q 1% 0.1W				
2720 4822 124 41071	22uF 20% 16W	3718 4822 117 11503	22Q 1% 0.1W				
2721 4822 121 42004	10pF 10% 50V	3719 4822 051 20331	33Q 5% 0.1W				
2722 4822 126 14122	6.8pF 10% 50V	3721 4822 051 20479	47Q 5% 0.1W				
2723 4822 126 140606	1uF 20% 50V	3722 4822 051 20479	47Q 5% 0.1W				
2724 4822 122 33216	270pF 5% 50V	3723 4822 051 20479	47Q 5% 0.1W				
2725 4822 126 13196	CER2 SMD 25V	3725 4822 051 20101	1000 5% 0.1W				
		100N PM10 R	3726 4822 051 20332	3K 5% 0.1W			
2726 4822 126 13196	CER2 SMD 25V	3727 4822 051 20332	3K 5% 0.1W				
		100N PM10 R	3728 4822 050 21009	100 1% 0.6W			
2728 5322 122 32966	38pF 5% 50V	3729 4822 051 20332	3K 5% 0.1W				
2729 5322 122 32448	10pF 5% 50V						
2730 4822 121 42004	10nF 10% 400V	3731 4822 050 21009	100 1% 0.6W				
2731 4822 126 14122	6.8pF 10% 50V	3732 4822 051 20332	3K 5% 0.1W				
2732 4822 126 140606	1uF 20% 160V	3733 4822 051 20109	100 5% 0.1W				
2733 4822 122 33177	10nF 20% 50V	3734 4822 051 20113	1K 5% 0.1W				
2734 4822 126 13196	CER2 SMD 25V	3735 4822 051 20121	100 1% 0.6W				
		100N PM10 R	3736 4822 051 20479	47Q 5% 0.1W			
2736 4822 126 13196	CER2 SMD 25V	3740 4822 051 20228	22Q 1% 0.1W				
		100N PM10 R	3741 4822 051 20301	30Q 5% 0.1W			
2737 4822 126 10681	680R00 5% 1W	3742 4822 051 20301	3K 5% 0.1W				
2739 5322 122 32966	38pF 5% 50V	3743 4822 051 20302	3K 5% 0.1W				
2740 5322 122 32448	10pF 5% 50V						
2741 4822 124 42171	22uF 25V	3744 4822 051 20274	270K 5% 0.1W				
2742 4822 121 42004	10nF 10% 400V	3745 4822 051 20008	QJ JUMP. (SMD)				
2743 4822 126 14122	6.8pF 10% 50V	3746 4822 051 20479	47Q 5% 0.1W				
2744 4822 126 140606	1uF 20% 160V	3747 4822 051 20105	1K 5% 0.1W				
2745 4822 124 40433	47uF 20% 50V	3748 4822 051 20124	120K 5% 0.1W				
2746 4822 124 40433	47uF 20% 25V	3750 4822 050 22203	22Q 1% 0.6W				
2747 4822 121 43693	10nF 100V	3751 4822 117 10834	47K 1% 0.1W				
2748 4822 124 40311	100pF 20% 25V	3752 4822 116 52195	47Q 5% 0.5W				
2749 4822 126 13196	CER2 SMD 25V	3753 4822 117 10833	10K 1% 0.1W				
		100N PM10 R	3754 4822 051 20479	47Q 5% 0.1W			
2750 4822 124 80131	100pF 20% 25V	3755 4822 051 20479	47Q 5% 0.1W				
		100N PM10 R	3756 4822 051 20332	300 5% 0.1W			
2751 4822 124 80131	100pF 20% 25V	3757 4822 051 20332	300 5% 0.1W				
2752 5322 122 32658	22pF 5% 50V	3758 4822 051 20332	300 5% 0.1W				
2753 5322 122 32654	22pF 5% 50V	3759 4822 051 20332	300 5% 0.1W				
2754 4822 126 10326	180pF 5% 63V	3760 4822 051 20332	300 5% 0.1W				
2755 4822 124 80131	100pF 20% 25V	3761 4822 051 20332	300 5% 0.1W				
2756 4822 124 40433	47uF 20% 25V	3762 4822 051 20274	270K 5% 0.1W				
2757 4822 124 40433	47uF 20% 25V	3763 4822 051 20008	QJ JUMP. (SMD)				
		100N PM10 R	3764 4822 051 20479	47Q 5% 0.1W			
2758 4822 124 40433	47uF 20% 25V	3765 4822 051 20105	1M 1% 0.6W				
		100N PM10 R	3766 4822 050 21005	1M 1% 0.6W			
2760 5322 122 32658	22pF 5% 50V	3767 4822 051 20124	120K 5% 0.1W				
2761 5322 122 32658	22pF 5% 50V	3768 4822 050 22203	22K 1% 0.6W				
2762 5322 122 32658	22pF 5% 50V	3769 4822 050 22203	22K 1% 0.6W				
2763 5322 122 32654	22pF 5% 50V	3770 4822 051 20332	300 5% 0.1W				
2764 4822 126 10327	180pF 5% 63V	3771 4822 117 10832	47K 1% 0.1W				
2765 4822 124 80131	100pF 20% 25V	3772 4822 051 20274	270K 5% 0.1W				
2766 4822 122 33249	10pF 5% 100V	3773 4822 051 20121	120Q 5% 0.1W				
2767 4822 126 13196	CER2 SMD 25V	3774 4822 051 20301	300Q 5% 0.1W				
		100N PM10 R	3775 4822 051 20302	3K 5% 0.1W			
2768 4822 126 13196	CER2 SMD 25V	3776 4822 051 20274	270K 5% 0.1W				
		100N PM10 R	3777 4822 051 20302	3K 5% 0.1W			
2769 4822 126 13196	CER2 SMD 25V	3778 4822 051 20274	270K 5% 0.1W				
		100N PM10 R	3779 4822 051 20274	270K 5% 0.1W			
2770 4822 126 13196	CER2 SMD 25V	3780 4822 051 20105	1M 5% 0.1W				
		100N PM10 R	3781 4822 051 20008	0.22 100 5% 0.1W (SMD)			
2771 4822 121 43693	10pF 100V	3782 4822 051 20124	1M 1% 0.6W				
2772 4822 122 33668	1nF 5% 50V	3783 4822 051 20124	120K 5% 0.1W				
2773 4822 126 12267	470pF 10% R(HR)	3784 4822 050 22203	22K 1% 0.6W				
		100N PM10 R	3785 4822 050 22203	22K 1% 0.6W			
2774 4822 126 13196	CER2 SMD 25V	3786 4822 051 20274	270K 5% 0.1W				
		100N PM10 R	3787 4822 116 52195	47Q 5% 0.5W			

1158 Earphone panel

Various

5001 4822 152 20596	IND FXD SP0305 A	47U PM10 B
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Spare parts list

Spare parts list

-II-

Quick Reference for 17" and 19" Monitors

Major Difference Between 19A580BQ/74C And 17A580BQ/74C

ITEM	MODEL 12 NC	19A580BQ/74C	17A580BQ/74C
1		3138 107 94230 (Front Cabinet Assy)	3138 107 94670 (Front Cabinet Assy)
		3138 104 39260 (Front Cabinet)	3138 104 40530 (Front Cabinet)
		3138 104 39310 (LENS)	3138 104 40590 (LENS)
		3138 104 39320 (Function Knob)	3138 104 40580 (Function Knob)
	x		3138 104 40600 (Speaker-Grille)
		3138 104 39350 (Speaker-Panel - R)	x
		3138 104 39340 (Speaker Panel - L)	x
2		3138 104 39300 (Rotary Knob)	3138 104 40720 (Rotary Knob)
8		3138 104 39380 (Power Knob)	3138 104 40710 (Power Knob)
10		3138 107 94440 (Cable Cover Assy)	3138 107 94730 (Cable Cover Assy)
		3138 104 39330 (Cable Cover)	3138 104 40610 (Cable Cover)
		3138 106 49960 (P.E. BAG)	3138 106 32610 (P.E. BAG)
25		3138 107 94240 (Pedestal Assy)	3138 107 94680 (Bottom Plate Assy)
		3138 104 39280 (Bottom)	3138 104 40550 (Bottom)
		3138 104 39290 (Base - Pedestal)	3138 104 40560 (Base - Pedestal)
26		3138 104 39270 (Back Cover)	3138 107 94960 (Back Cover Assy)
	x		3138 104 40541 (Back Cover)
	x		3138 104 41711 (USB Cover)
27		3138 104 40950 (USB Cover)	x
125		3138 105 35110 (D.F.U.)	3138 105 35190 (D.F.U.)
450		3138 106 51130 (Carton)	3138 106 51790 (Carton)
451		3138 106 51100 (Cushion-Top-L)	3138 106 51340 (Cushion-Top-L)
452		3138 106 51110 (Cushion-Top-R)	3138 106 51350 (Cushion-Top-R)
453		3138 106 51120 (Cushion-Bottom)	3138 106 51360 (Cushion-Bottom)
454		3138 106 38440 (P.E. BAG for SET)	3138 106 39690 (P.E. BAG for SET)
1155		4822 131 11275 M46LLQ 683X01 (S)	4822 131 11277 M41KSX 683X24 (T)
1156		3138 128 62000 (Main PCB Assy)	3138 128 62450 (Main PCB Assy)
1158		3138 128 59270 (Earphone PCB Assy)	3138 128 63380 (Earphone PCB Assy)
1166		3138 128 77960 (Degaussing Coil Assy)	3138 128 77930 (Degaussing PCB Assy)
8160	x		3138 128 72740 (Rotation Coil)

Difference List Between 3138 128 59270 And 3138 128 63380

ITEM	MODEL 12 NC	3138 128 59270 (Earphone PCB Assy)	3138 128 63380 (Earphone PCB Assy)
2081		5322 122 32654 (22n/50v)	x
2082		5322 122 32654 (22n/50v)	x

Quick Reference for 17" and 19" Monitors (Continued)

Difference List Between 3138 128 62000 And 3138 128 62450

ITEM	MODEL 12 NC	17A580BQ/74C	17A580BQ/00C
125		3138 105 35190 (D.F.U.)	3138 105 35180 (D.F.U.)
126		3138 105 35210 (QUICK SET UP GUIDE)	3138 105 35200 (QUICK SET UP GUIDE)
127		x	x
128		3138 106 32610 (P.E. BAG)	3138 106 33440 (P.E. BAG)
450		3138 106 51790 (CARTON)	3138 106 51400 (CARTON)

Difference List

ITEM	MODEL 12 NC	19A580BQ/74C	19A580BQ/00C
125		3138 105 35110 (D.F.U.)	3138 105 35260 (D.F.U.)
126		3138 105 35210 (QUICK SET UP GUIDE)	3138 105 35200 (QUICK SET UP GUIDE)
127		x	x
450		3138 106 51130 (CARTON)	3138 106 51800 (CARTON)
1151		3138 128 75240 (MAINS CORD)	3138 128 75250 (MAINS CORD)

CM5800 BRIEF

A. GENERAL

The CM5800 is a Digitally Controlled Autoscan Color Display Monitor with 19" Low Emission CRT which is specially designed for low cost and high performance. This monitor can operate at horizontal scan frequencies from 30 to 95 kHz and vertical scan frequencies from 47 to 160 Hz.

This monitor is equipped with an embedded microcontroller which can preset the required modes. The CM5800 provides many functions, such as digitally adjustable picture, DDC1/2B, power management, low emission, high immunity, etc.

This monitor complies with MPRII low emission standard and also fulfills TCO'91 automatic power saving requirements. To reduce power consumption to less than 15 watts in standby or suspend mode and less than 5 watts in off mode, the monitor also complies with the energy star computer program initiated by the EPA.

B. DESCRIPTION OF CM5800

This description mainly introduces the functions, including power supply / power saving management, horizontal / vertical deflection, video amplifier, microcontroller, etc.

1. POWER SUPPLY / POWER SAVING MANAGEMENT

POWER SUPPLY:

This monitor is designed with an off-line flyback switch mode power supply which can operate with input from 90 VAC to 270 VAC. The power supply uses an IC (L4990) for current mode pwm controller and drives the mosfet switch directly. The control scheme transforms a switching converter from a voltage source into a multi-output voltage. The control concept exhibits many desirable properties such as inherent over-load protection, stable and fast system response.

The maximum power consumption is up to 130 watts. A power limiting circuit is added for safety reasons.

Secondary feedback via an optocoupler is used to obtain a stable output voltage. The secondary feedback supplies all necessary voltages for deflection and video. Voltage stabilizer IC is used to supply the small signals and microcontroller/EPROM.

POWER SAVING MANAGEMENT:

This monitor can reduce power consumption while no sync pulses are detected by microcontroller and automatically recover to normal power when sync signals are detected by microcontroller.

During power saving mode, the second power supply still delivers 5V to uc (CPU).

The consumed power is less than 15 watts during standby / suspend modes, and less than 5 watts during off mode.

2. HORIZONTAL / VERTICAL DEFLECTION

HORIZONTAL DEFLECTION:

SYNC PROCESSING PART:

The heart of horizontal/vertical deflection controller is TDA4858 which can offer complete and efficient small signal sync processing for autosync monitors. This device is fully dc controllable and can be used in applications with a microcontroller as well as stand-alone with potentiometer control.

CM5800 BRIEF

This controller provides sync processing, which can accept separate, composite (H+V) and sync-on-video input signals. A very short setting time after mode change for protection of external power components has been taken.

The TDA4858 provides extensive functions like a flexible smps block and a geometry control with facilities, leading to excellent picture quality. This device also can directly drive the vertical deflection output stage, the line driver stage, the E/W output stage and the EHT stage. All controls are dc and tracked with the incoming frequencies.

DEFLECTION PART:

The horizontal deflection is built around the buck converter which makes it possible to combine H-deflection and EHT generator and allows size and e/w correction without influencing EHT.

The flyback pulse from the buck converter is used by the line output.

Transformer (LOT) generates the required 26.0kV anode voltage.

The adjustable focus (G3) and screen (G2) voltages are internally derived from the anode voltage. Other secondary windings are used to generate the voltages for G1 and horizontal raster DC shift. For 19 inch monitor also provides dynamic focus on G4 to get a good focus performance. (G4 also adjustable).

To guarantee constant EHT over the whole frequency range, the B+ is made tracked with H-frequency by means of a step down converter.

The horizontal size and east/west correction are obtained by varying the voltage of buck converter of the lower deflection a circuit.

Five-capacitors switch and dc controlled linearity coil are designed for optimal screen linearity.

For safety reasons, x-ray protection circuit is included, and the control information sensing by TDA4858 will shut down the h-deflection (and thereby EHT generator) if the anode voltage exceeds a certain value.

This circuit is also used for beam current overload protection. Shut down the deflection in case the total beam current exceeds a certain limit to protect both CRT and LOT.

VERTICAL DEFLECTION:

The majority of vertical deflection functions is integrated by two ICs; TDA4858 and TDA8172.

The TDA4858 takes care of sync polarity correction, automatic catching and holding of the vertical oscillator, generation of sawtooth drive current for vertical output and vertical s-correction, and generation of a correct V-blanking pulse for video blanking during vertical retrace lines.

The TDA8172 which is a dc-coupled vertical deflection booster with differential input signals is suitable for color monitor. The output stage has thermal and soar protection, and high linear sawtooth signal amplification to obtain the required vertical deflection current.

To obtain a fast vertical retrace for non-VGA mode an external flyback supply is used.

3. VIDEO AMPLIFIER

The heart of the video circuit is TDA4885. This controller can drive the hybrid post-amp. CR6927 by buffer stage. The video DC level and gain at the cathode will be controlled by the software.

The red, green and blue video signals are amplified and inverted by the preamplifier to output stage and AC coupled to the CRT cathodes.

Three cut-off adjustments are provided to set the video black level at cathode for all three guns. Also three individual gain adjustments are provided to adjust the white point at maximum swing. Both cut-off and gain controls are digital type controled by microprocessor. For limiting the beam current and preventing local doming, the beam current limit will automatically reduce the video swing in case the maximum beam current is exceeded (ABL adjustment: R3647).

Brightness control, which is controlled by TDA4885, reduces power consumption in video amplifier. To suppress the vertical retrace lines during vertical retrace, a vertical blanking pulse is added to grid 1.

A spot-killer circuit is also added to prevent CRT spot burn-in when the set is switched off.

DDC 1/2B:

Via SDA, data about the monitor, including the serial number, production codes, CRT type and applicable timings are stored in the EEPROM (24IC21). To avoid picture interference, the reading and writing processes are executed during vertical blanking which is informed by the vertical sync.

4. MICROCONTROLLER

GENERAL DESCRIPTION:

The Philips P87C380 microprocessor is used to control the monitor. The preset data are stored in EEPROM ST24W08.

HARDWARE DEFINITION:

A. KEYBOARD

There are 3 key pads and one rotary encoder at the front of monitor for the OSD control.

- OSD function key:

Push it to confirm entrance or exit from the OSD window

- Encoder:

To select or adjust the parameters which are chosen from OSD.

- Brightness key:

Push it, the OSD shows the window, then adjust with the encoder.

- Contrast key:

Push it, the OSD shows the window, then adjust with the encoder.

B. OSD WILL DISAPPEAR AND SAVE AUTOMATICALLY AFTER NON-OPERATION

C. SOFTWARE WILL CONTROL THE DPMS ACCORDING TO THE SYNC STATUS.

D. VIDEO PRESET MODES

Preset video resolution and sync. Polarities

Resolution modes	H frequency	V frequency	H	V
720 x 400	31.469K	70.087Hz (VGA)	-	+
640 x 480	31.469K	59.940Hz (VESA/60)	-	-
640 x 480	37.500K	75.000Hz (VESA/75)	-	-
640 x 480	43.269K	85.008Hz (VESA/85)	-	-
800 x 600	37.879K	60.317Hz (VESA/60)	+	+
800 x 600	46.875K	75.000Hz (VESA/75)	+	+
800 x 600	53.674K	85.061Hz (VESA/85)	+	+
1024 x 768	48.363K	60.004Hz (VESA/60)	-	-
1024 x 768	60.023K	75.029Hz (VESA/75)	+	+
1024 x 768	68.677K	84.997Hz (VESA/85)	+	+
1280 x 1024	63.981K	60.020Hz (VESA/60)	+	+
1280 x 1024	80.000K	75.000Hz (VESA/75)	+	+
1280 x 1024	91.146K	85.024Hz (VESA/85)	+	+
1600 x 1200	75.000K	60.000Hz (VESA/60)	+	+
1600 x 1200	93.750K	75.000Hz (VESA/75)	+	+

Safety Checks

After the original service problem has been corrected, a complete safety check should be made. Be sure to check over the entire set, not just the areas where you have worked. Some previous servicer may have left an unsafe condition, which could be unknowingly passed on to your customer. Be sure to check all of the following:

Fire and Shock Hazard

1. Be sure all components are positioned in such a way as to avoid the possibility of adjacent component shorts. This is especially important on those chassis which are transported to and from the service shop.
2. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs, and other hardware have been installed in accordance with the original design.
3. Soldering and wiring must be inspected to locate possible cold solder joints, solder splashes, sharp solder points, frayed leads, pinched leads, or damaged insulation (including the ac cord). Be certain to remove loose solder balls and all other loose foreign particles.
4. Check across-the-line components and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layout, lead length, and dress.
5. No lead or component should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces or edges must be avoided.
6. Critical components having special safety characteristics are identified with an **s** by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol on the schematic diagrams and/or exploded views.
7. When servicing any unit, always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose you to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized ac line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords which do not incorporate the polarizing feature should never be used.
9. After reassembly of the unit, always perform an ac leakage test or resistance test from the line cord to all exposed metal parts of the cabinet. Also, check all metal control shafts (with knobs removed), antenna terminals, handles, screws, etc. to be sure the unit may be safely operated without danger of electrical shock.

* Broken line 

Implosion

1. All picture tubes used in current model receivers are equipped with an integral implosion system. Care should always be used, and safety glasses worn, whenever handling any picture tube. Avoid scratching or otherwise damaging the picture tube during installation.
2. Use only replacement tubes specified by the manufacturer.

X-radiation

1. Be sure procedures and instructions to all your service personnel cover the subject of X-radiation. Potential sources of X-rays in TV receivers are the picture tube and the high voltage circuits. The basic precaution which must be exercised is to keep the high voltage at the factory recommended level.
2. To avoid possible exposure to X-radiation and electrical shock, only the manufacturer's specified anode connectors must be used.
3. It is essential that the service technician has an accurate HV meter available at all times. The calibration of this meter should be checked periodically against a reference standard.
4. When the HV circuitry is operating properly there is no possibility of an X-radiation problem. High voltage should always be kept at the manufacturer's rated value - no higher - for optimum performance. Every time a color set is serviced, the brightness should be run up and down while monitoring the HV with a meter to be certain that the HV is regulated correctly and does not exceed the specified value. We suggest that you and your technicians review test procedures so that HV and HV regulation are always checked as a standard servicing procedure, and the reason for this prudent routine is clearly understood by everyone. It is important to use an accurate and reliable HV meter. It is recommended that the HV reading be recorded on each customer's invoice, which will demonstrate a proper concern for the customer's safety.
5. When troubleshooting and making test measurements in a receiver with a problem of excessive high voltage, reduce the line voltage by means of a Variac to bring the HV into acceptable limits while troubleshooting. Do not operate the chassis longer than necessary to locate the cause of the excessive HV.

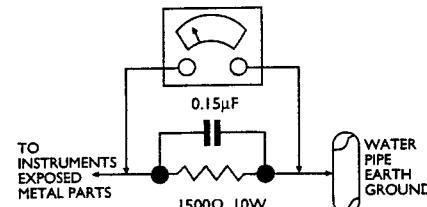
WARNING: Before removing the CRT anode cap, turn the unit **OFF** and short the HIGH VOLTAGE to the CRT DAG ground.
SERVICE NOTE: The CRT DAG is not at chassis ground.

6. New picture tubes are specifically designed to withstand higher operating voltages without creating undesirable X-radiation. It is strongly recommended that any shop test fixture which is to be used with the new higher voltage chassis be equipped with one of the new type tubes designed for this service. Addition of a permanently connected HV meter to the shop test fixture is advisable. The CRT types used in these new sets should never be replaced with any other types, as this may result in excessive X-radiation.
7. It is essential to use the specified picture tube to avoid a possible X-radiation problem.

8. Most TV receivers contain some type of emergency "Hold Down" circuit to prevent HV from rising to excessive levels in the presence of a failure mode. These various circuits should be understood by all technicians servicing them, especially since many hold down circuits are inoperative as long as the receiver performs normally.

Leakage Current Cold Check

1. Unplug the ac line cord and connect a jumper between the two prongs of the plug.
2. Turn on the power switch.
3. Measure the resistance value between the jumpered ac plug and all exposed cabinet parts of the receiver, such as screw heads, antennas, and control shafts. When the exposed metallic part has a return path to the chassis, the reading should be between 1 megohm and 5.2 megohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity. Remove the jumper from the ac line cord.

**Leakage Current Hot Check**

1. Do not use an isolation transformer for this test. Plug the completely reassembled receiver directly into the ac outlet.
2. Connect a 1.5k 10W resistor paralleled by a 0.15μF capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 ohms/volt sensitivity to measure the potential across the resistor.
4. The potential at any point should not exceed 0.75 volts. A leakage current tester may be used to make this test; leakage current must not exceed 0.5millamps. If a measurement is outside of the specified limits, there is a possibility of shock hazard. The receiver should be repaired and rechecked before returning it to the customer.
5. Repeat the above procedure with the ac plug reversed. (Note: An ac adapter is necessary when a polarized plug is used. Do not defeat the polarizing feature of the plug.)

Picture Tube Replacement

The primary source of X-radiation in this television receiver is the picture tube. The picture tube utilized in this chassis is specially constructed to limit X-radiation emissions. For continued X-radiation protection, the replacement tube must be the same type as the original, including suffix letter, or a Philips approved type.

Parts Replacement

Many electrical and mechanical parts in Philips television sets have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. The use of a substitute part which does not have the same safety characteristics as the Philips recommended replacement part shown in this service manual may create shock, fire, or other hazards.

Service

Service

Service

Service Information

97.01

Service information 4822 727 21038 is herewith cancelled.

This [DDC Module (DDC cable)= 4822 320 12004 (=4822 724 27550)]

and [DDC V2(DDCV2N.EXE) software(3.5" disk)=4822 711 00024 (= 4822

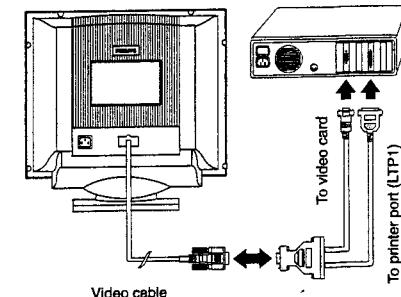
724 27560)]

are used for "BU Monitor - Chungli product range" which incorporates a DDC1/DDC2B function that allows bi-directional communication between the monitor and PC system for optimal video configuration.

[July 01 1997, Revision 2.0], which upgrades the software and service information(4822 727 21027 & 4822 727 21038), is fully compatible with previous one.

Connection

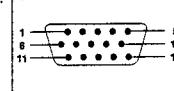
(Rear of the monitor)

**Additional information :**

Additional information about DDC (Display Data Channel) may be obtained from Video Electronics Standards Association (VESA). Extended Display Identification (EDID) information may be also be obtained from VESA.

Pin assignment

The 15-pin D-sub connector (male) of the signal cable (3 rows) for DDC feature :



Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	No pin
2	Green video input	10	Logic ground
3	Blue video input	11	Identical output connected to pin 10
4	Identical output connected to pin 10	12	Serial data line (SDA)
5	Ground	13	H.sync
6	Red video ground	14	V. sync (VCLK for DDC)
7	Green video ground	15	Data clock (SCL)
8	Blue video ground		

DDC data re-programming

1. General

In case the DDC data memory IC, replaced due to a defect the data contents of this IC have to be re-programmed via a PC.

In case of replacement of the video board it is advised to re-soldered DDC IC from the old board onto the new board, in this case the IC does not need to be re-programmed.

2. DDCV2N.EXE can be used for :

EDID Structure Version/Revision

Version	:	1
Revision	:	0

(text file)

Version	:	1
Revision	:	1

(hex file)



INSTRUCTIONS

DDC Reprogramming Instruction (for PHILIPS Branded models)

System Requirements

DDC Module (DDC cable), P/N = 4822 320 12004

An Intel 386 (or above) PC or compatible

DOS 6.0 or above

DDCV2N.EXE software

Procedure

Connect DDC Cable as shown in cover page.

Insert diskette in Drive a: Select Run "DDCV2N.EXE" under DOS or Win.

Press "Enter" at the introduction screen

Menu Configuration:

File	R/W	Setup	Quit
Load EDID	Write EDID to EEPROM	Options	
Load txt file (V1.0)	Read From EEPROM	Barcode format	
Save EDID	Edit EDID Code		
Save txt File	Auto Scan		
Convert EDID Code			
Os shell			
Exit			

General :

1. How to change drive

Use arrow keys to highlight "Options" under the Setup menu, Press "Enter".

Press "F2", then Press "ESC", fill in "A" or "C".

[(If your .HEX files for different Model numbers in drive "A", then fill in "A").,

(If your .HEX files for different Model numbers in drive "C", then fill in "C").

Normally, to read DDC data from EEPROM of Monitor is enough.]

Press "Enter", then Press "ESC"

2. How to select .HEX files for different Model numbers

example:

Use arrow keys to highlight "Load EDID" under the File menu, Press "Enter"

Bring up **BRANDED** Press "Enter"Bring up **..\21B772BE\CM58** ← select, Press "Enter"Bring up **..\19A74C.19A00C** ← at this highlight area, Press "Enter", then go back to last screen
19A74C.HEX ← select for 19A580BQ/74C
19A00C.HEX ← select for 19A580BQ/00C

INSTRUCTIONS

How to write DDC hex files to Monitor

Use arrow keys to highlight "Options" under the Setup menu, Press "Enter"

Tab down to ID Serial Number, Use down arrow key to place the asterisk (*) beside "store in DEC with LSB first". Press "control/enter" to save.
(Ensure the top asterisk (*) is beside in store in HEX with LSB first.)

Use arrow keys to highlight "Load EDID" under the file menu, Press "Enter".

Use arrow keys to highlight "BRANDED\", Press "Enter".

Use arrow keys to highlight "the model list under subdirectly", Press "Enter".

Use arrow keys to highlight "Write EDID to EEPROM" under the R/W menu, Press "Enter".

Use arrow keys to highlight "Read from EEPROM" under the R/W menu, Press "Enter".

Use arrow keys to highlight "Edit EDID Code" under the R/W menu, Press "Enter".

Verify the ID Serial number on the screen matches the serial number of the unit.

Verify EDID Structure Version is "Version :1, Revision :1

Press "ESC"

Use arrow keys to highlight "Quit", Press "Enter".

Menu Configuration:

File	R/W	Setup	Quit
Load EDID	Write EDID to EEPROM	Options	
Load txt file (V1.0)	Read From EEPROM	Barcode format	
Save EDID	Edit EDID Code		
Save txt File	Auto Scan		
Convert EDID Code			
Os shell			
Exit			

Remark: ID product code and ID Serial Number setting are for "PHILIPS" & "STENCIL" DDC TEXT

INSTRUCTIONS

How to change the Year, Week & Serial number of Monitor (for BRANDED models)

Use arrow keys to highlight "Barcode format", under the Setup menu, Press "Enter".

Bring up : **Barcode example : 9741222266**
Barcode format : YYWWSSSSSS

Fill in 9741222266, press "Enter"
 Fill in yywwssssss, press "Enter"

continue : **Barcode example : 9741222266**
Barcode format : YYWWSSSSSS

Manufacture Year : 1997
 Manufacture Week : 41
 Serial no. : 222266

EDID [16] Week : 29
 EDID [17] Year : 07 [Year-1990]
 EDID [12..15] S/N. : 0003643a

data correct ? (Y/N) Y

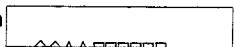
Fill in "Y", don't press "Enter"

There is a description at the lower of the screen for Barcode format as below.

Barcode format : Y,W,S,X,- (year,week,s/no,ignore,fixed)

Y stands for "year".
 W stands for "week".
 S stands for "s/no (serial number)".
 X stands for "ignore". Allow user to fill in any 'character' or 'numeric'.
 - stands for "fixed". User have to fill in Special 'character' or 'numeric' for "AutoScan" if user fill in '-' at "Barcode format :".

Use arrow keys to highlight "Auto Scan" under the R/W menu, Press "Enter".

Bring up: **Auto Scan**  ← year, week, serial number can be changed

- ◊◊△△□□□□□
- SerialNumber**
- YearCode**
- WeekCode**
- * don't care**

Fill in "Barcode data (for instance: 9741222266)" beside Auto Scan, press "Enter"
 9745000240
 9640001000

Press "ESC" "ESC", return to R/W menu.
 PCS 90 034

How to change the serial number of Monitor (for PCEC models)

Use arrow keys to highlight "Barcode format", under the Setup menu, Press "Enter".

Bring up : **Barcode example : 5800C12345678**
Barcode format : XXXXXSSSSSSSS

Fill in 5800C12345678, press "Enter"
 Fill in xxxxxxxssssss, press "Enter"

continued : **Barcode example : 5800C12345678**
Barcode format : XXXXXSSSSSSSS

Manufacture Year : 1997
 Manufacture Week : 40
 Serial no. : 12345678
 Serial no. ASCII : 5800C12345678

.....

data correct ? (Y/N) Y

(can be changed), press "Enter"
 (can be changed), press "Enter"

Fill in 5800C12345678, press "Enter"

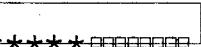
Fill in "Y", don't press "Enter"

There is a description at the lower of the screen for Barcode format as below.

Barcode format : Y,W,S,X,- (year,week,s/no,ignore,fixed)

Y stands for "year".
 W stands for "week".
 S stands for "s/no (serial number)".
 X stands for "ignore". Allow user to fill in any 'character' or 'numeric'.
 - stands for "fixed". User have to fill in Special 'character' or 'numeric' for "AutoScan" if user fill in '-' at "Barcode format :".

Use arrow keys to highlight "Auto Scan" under the R/W menu, Press "Enter".

Bring up: **Auto Scan**  ← year, week, serial number can be changed

- SerialNumber**
- YearCode**
- WeekCode**
- * don't care**

Fill in "Barcode data (for instance: 5800C12345678)" beside Auto Scan, press "Enter"

5800J28256153

58008H75602720

Press "ESC" "ESC", return to R/W menu.

For the original DDC TEXT file:

Use arrow keys to highlight "Load txt file (V1.0)" under the File menu. Press "Enter"

1. Data text file editing options

The data text file can be edited by the DOS-editor.

2. Re-programming instructions

- Turn on PC and monitor
- Connect the module to the PC and monitor, see connection figure on front page.
- Insert the floppy disk into drive A: and follow the following routine:
- Type "DDC" and then press "ENTER". On the screen it will show: "Adaptor check...", then the screen will display "main menu".
- Use the arrow keys to highlighting items 1, 2, 3, 4, 0 :

Step 1 - Select item "1" ,which appear as a highlight, and press "ENTER" to convert a text data into EDID data.

- Enter the text file name with directory path eg. "a:\CM0200\BND14PHL.TXT" and press "ENTER".
- The available text file on the floppy will now be converted into a binary file that can be downloaded into the memory IC.
- Press "ENTER" to continue, the program will return to main menu.

Step 2 - Select item "2" ,under the main menu , and press "ENTER" to write a complete EDID data file to EEPROM. Now, the data will be loaded into the memory IC.

- Press "ENTER" to continue, the program will return to main menu.

Step 3 - Select item "3" ,under the main menu, and press "ENTER" to verify that EDID downloading is successful. This function also can be used to view current DDC data in monitor.

- Press "ENTER" and follow the indication on the screen to return main menu.

Step 4 - Select item "4" ,under the main menu, and press "ENTER" to enter DOS prompt and DOS Editor of your system. By DOS Editor, the function allow you to modify or update DDC data eg. manufacturing week, serial number etc according to the rear cover type label of the set.

- The production serial number of type label consist of:
- TY - origin of production centre
- 00 - technical service change code
- 95 - production year
- 12 - production week
- 123456 - 6 digits (max) serial number

Once the modification of DDC text file is completed under DOS Editor, Quit to DOS prompt and return to main menu by typing "EXIT" and press "ENTER". After text file is modified according above description, you can repeat the process of step 1 to step 3 to re-program DDC data again.

Step 5 - Select item "0" ,under the main menu, and press "ENTER" to quit DDC program and return to DOS prompt.

3. Remark 1 :

During the re-programming, it is recommended to follow step 1,step 2, and step 3.

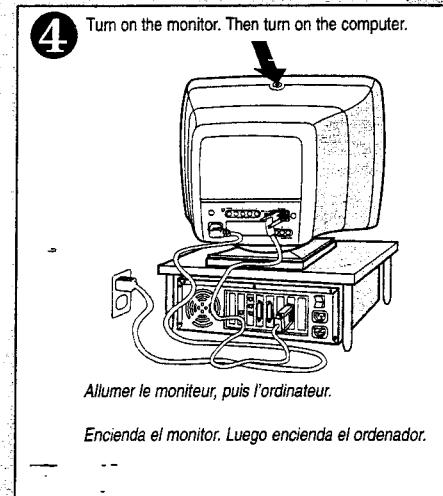
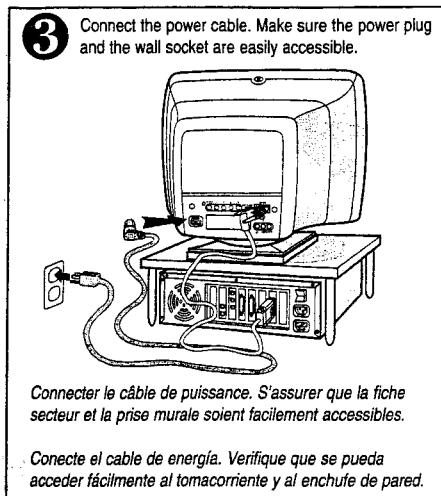
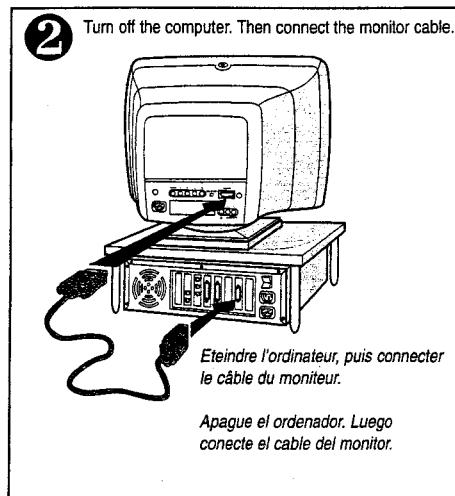
Due to different format requirements by customer, If read DDC data from monitor by step 3 , product ID and serial number will show 3 formats, <decimal>, <hexa-decimal>, and <ASCII>, the correct format can be obtained by running step 1 again (the correct format can be detected and identified automatically by step 1 from original text file).

Setting Up your Philips monitor

IBM-compatible computer hookup continued from step 1 on other side.

Connecter l'ordinateur compatible IBM, suite de la première étape de l'autre côté.

Conexión del ordenador compatible con IBM (continuación del paso 1 del otro lado de la página).



If you have Windows '95 . . .

Follow these steps to complete setting up your monitor.

1. Start Windows '95 and install CD ROM supplied with this monitor.
2. Click on the "START" icon. Next, click on the "SETTINGS" icon. Then click on "CONTROL PANEL."
3. Double-click on "DISPLAY" icon. Next, click on "SETTINGS" tab. Then click on "ADVANCED PROPERTIES" dialog box.
4. Click on "MONITOR" tab.
- 5a. If you have an old computer, click on "CHANGE" dialog box. Next, "SELECT DEVICE" screen appears. Now click on "HAVE DISK" dialog box, and select CD-ROM drive
Or
- 5b. If you have a new computer, "SELECT DEVICE" screen automatically appears. Click on "HAVE DISK" dialog box and select CD-ROM drive.
6. Select "OK" in the "INSTALL FROM DISK" dialog box. If model name of the Philips monitor is correct, click "OK" tab in the "SELECT DEVICE" dialog box.
7. Click "CLOSE" tab in the "ADVANCED PROPERTIES" dialog box. If your Windows '95 version is different or you need more detailed installation information, please refer to the Windows '95 user's manual. **For additional information on the monitor, please refer to the owner's manual.**

Si vous avez Windows '95 . . .

suivez les étapes suivantes pour terminer l'installation de votre moniteur.

1. Démarrer Windows 95 et installer le CD-ROM fourni avec votre moniteur.
2. Cliquer sur l'icône "DEMARRER", ensuite, cliquer sur l'icône "PARAMETRES", puis cliquer sur l'icône "PANNEAU DE CONFIGURATION".
3. Cliquer deux fois sur l'icône "AFFICHER", ensuite cliquer sur l'onglet "PARAMETRES", puis cliquer sur la boîte de dialogue "PROPRIÉTÉS AVANCEES".
4. Cliquer sur l'onglet "MONITEUR".
- 5a. Si vous avez un ancien ordinateur, cliquer sur la boîte de dialogue "CHANGER". ensuite l'écran "SELECTIONNER UNITÉ" apparaît. Maintenant cliquer sur la boîte de dialogue "DISQUETTE FOURNIE", et sélectionner le lecteur CD-ROM.
ou
5b. Si vous avez un ordinateur récent, l'écran "SELECTIONNER UNITÉ" apparaît automatiquement. Cliquer sur la boîte de dialogue "DISQUETTE FOURNIE" et sélectionner le lecteur CD-ROM.
6. Sélectionner "OK" dans la boîte de dialogue "INSTALLER A PARTIR DE LA DISQUETTE". Si le nom du modèle de moniteur Philips est correct, cliquer sur l'onglet "OK" dans la boîte de dialogue SELECTIONNER UNITÉ".
7. Cliquer sur l'onglet "FERMER" dans la boîte de dialogue "PROPRIÉTÉS AVANCEES". Si votre version Windows 95 est différente ou si vous voulez des informations plus détaillées sur l'installation, veuillez vous référer au manuel d'utilisateur de Windows 95. Pour des informations complémentaires sur le moniteur, veuillez vous référer au manuel d'utilisateur.

WHAT TO DO IF YOUR MONITOR ISN'T WORKING

Make sure . . .

- ...the Power cable is plugged in the wall and the rear of the monitor.
- ...the Power button on top of the monitor should be in the ON position.
- ...the monitor cable is properly connected to the back of the monitor and the computer.
- ...to check to see if the monitor cable has bent pins.
- ...the D-Sub/BNC switch on the rear of the monitor is in the correct position.

See pages 2 and 17 of the owner's manual for details.

See page 20 of the owner's manual for troubleshooting tips.

For warranty questions, please see your owner's manual.

QUE FAIRE SI VOTRE MONITEUR NE MARCHE PAS

S'assurer . . .

- ...que le câble de puissance soit branché dans le mur et à l'arrière du moniteur.
- ...que le bouton Marche/Arrêt au dessus de votre moniteur soit sur MARCHE.
- ...que le câble du moniteur soit bien connecté à l'arrière du moniteur et de l'ordinateur.

- ...de vérifier que le câble du moniteur n'ait pas de fiches tordues.
- ...que l'interrupteur D-Sub/BNC à l'arrière du moniteur soit en position correcte.

Voir page 24 et 39 de ce manuel d'utilisateur pour plus de détails.

Voir page 42 du manuel d'utilisateur pour des conseils de dépannage.

Si vous avez des questions concernant la garantie, veuillez consulter votre manuel d'utilisateur.

¿QUÉ HACER SI SU MONITOR NO FUNCIONA?

Verifique . . .

- ...si el cable de energía está enchufado a la fuente de energía y a la parte posterior del monitor.
- ...si el botón de alimentación en la parte superior del monitor está en la posición ON.

- ...si el cable del monitor está debidamente conectado a la parte posterior del monitor y del ordenador.
- ...que las clavijas del cable del monitor no estén dobladas.

- ...que el interruptor D-Sub/BNC en la parte posterior del monitor esté en la posición correcta. Si desea más detalles, consulte las páginas 46 y 61 del manual del propietario.

En la página 64 del manual del propietario encontrará consejos sobre la localización de fallas.

Para consultas sobre la garantía, consulte el manual del propietario.

Si tiene Windows '95 . . .

siga estos pasos para finalizar la configuración de su monitor.

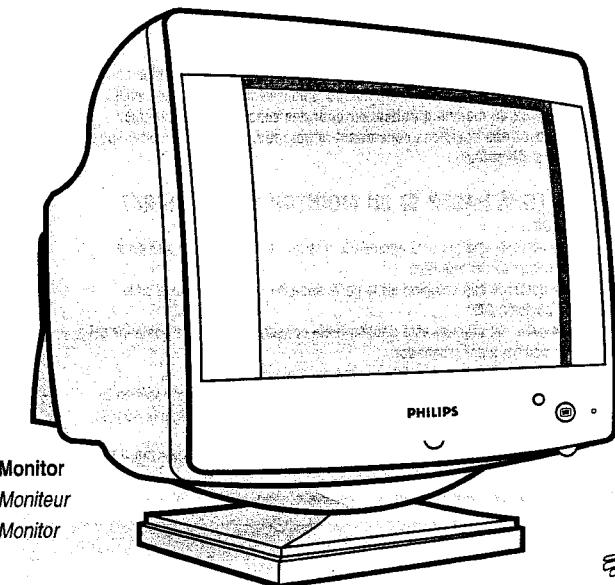
1. Inicie Windows '95 e instale el CD ROM que se suministra con su monitor.
2. Haga clic en el icono "INICIO". Luego haga clic en el icono "CONFIGURACIÓN". Luego haga clic en "PANEL DE CONTROL".
3. Haga doble clic en el icono "PANTALLA". A continuación haga clic en la etiqueta "CONFIGURACIÓN" y luego en el cuadro de diálogo "PROPIEDADES AVANZADAS".
4. Haga clic en la etiqueta "MONITOR".
- 5a. Si usted tiene un ordenador viejo, haga clic en el cuadro de diálogo "CAMBIAR". Luego aparece la pantalla "SELECCIÓN DE DISPOSITIVO". Ahora haga clic en el cuadro de diálogo "UTILIZAR DISCO" y seleccione la unidad CD-ROM.
o
5b. Si tiene un ordenador nuevo, aparece automáticamente la pantalla "SELECCIONAR DISPOSITIVO". Haga clic en el cuadro de diálogo "UTILIZAR DISCO" y seleccione la unidad CD-ROM.
6. Seleccione "ACEPTAR" en el cuadro de diálogo "INSTALAR DESDE DISCO". Si el nombre del modelo del monitor Philips está correcto, haga clic en la etiqueta "ACEPTAR" del cuadro de diálogo "SELECCIÓN DE DISPOSITIVO".
7. Haga clic en la etiqueta "CERRAR" del cuadro de diálogo "PROPIEDADES AVANZADAS". Si su versión de Windows '95 es diferente o necesita información más detallada acerca de la instalación, consulte el manual del usuario de Windows '95. Si desea información adicional acerca del monitor, consulte el manual del propietario.

Setting Up your Philips monitor

This foldout is designed to help you use your monitor as soon as possible. Refer to your owner's manual for detailed information. You may also contact us at our web site: <http://www.monitors.be.philips.com>

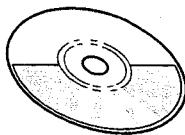
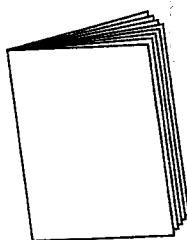
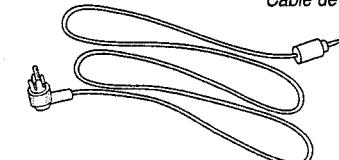
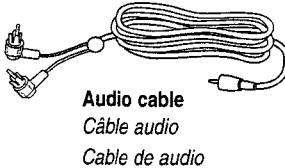
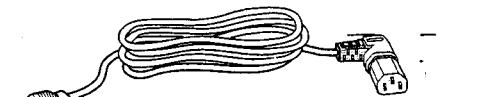
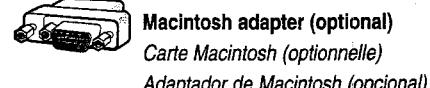
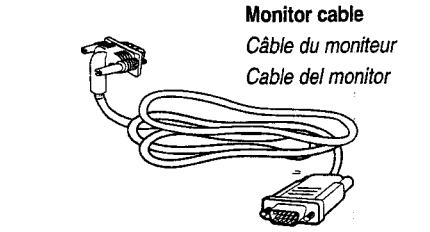
Ce dépliant est conçu pour vous aider à utiliser votre moniteur du plus vite possible. Consulter votre manuel d'utilisateur pour des informations détaillées. Vous pouvez aussi nous contacter sur notre site Web: <http://www.monitors.be.philips.com>

Esta hoja plegable está diseñada para ayudarle a usar su monitor tan pronto como sea posible. Consulte su manual si desea información detallada. También puede comunicarse con nosotros a través de nuestra página web: <http://www.monitors.be.philips.com>



1 Unpack all the parts.

Déballer toutes les pièces.
Desembale todas las piezas.



Installation de votre moniteur Philips.

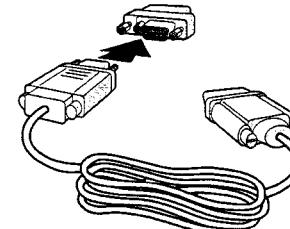
Configuración de su monitor Philips.

To hook up your monitor to a Macintosh-type computer, follow the steps below. To hook up your monitor to an IBM-compatible computer, follow step 1, then turn over this foldout. In either case, before installing this monitor, please refer to the user's guide of your computer and video adapter to see if this equipment needs any additional setting.

Suivre les étapes suivantes pour connecter votre moniteur à un ordinateur du type Macintosh. Pour connecter votre moniteur à un ordinateur compatible IBM, suivre la première étape, puis tourner ce dépliant. En tout cas, avant l'installation de votre moniteur, veuillez vous référer au manuel d'utilisateur de votre ordinateur et carte vidéo pour voir si cet équipement a besoin d'installation supplémentaire.

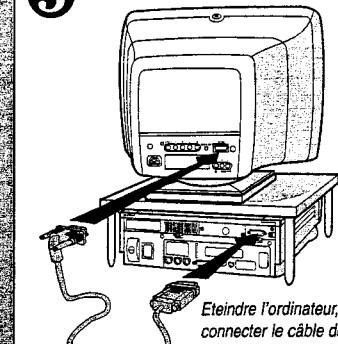
Para conectar su monitor a un ordenador tipo Macintosh, siga los pasos que se presentan a continuación. Para conectar su monitor a un ordenador compatible con IBM, siga el paso 1, luego volteé esta página. En ambos casos, antes de instalar este monitor, consulte la guía del usuario de su ordenador y de su adaptador de video, para

2 Connect the special Mac adapter (May not be included.) to one end of the monitor cable.



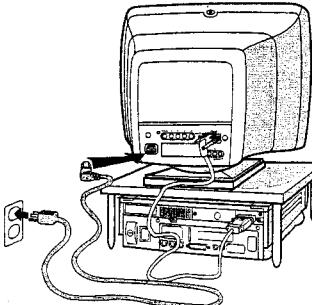
Conectar el adaptador especial de Mac (puede no estar incluido) a un extremo del cable del monitor.

3 Turn off the computer. Then connect the monitor cable.



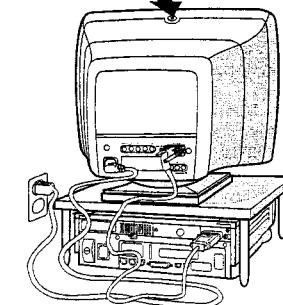
Apague el ordenador. Luego conecte el cable del monitor.

4 Connect the power cable. Make sure the power plug and the wall socket are easily accessible.



Conectar el cable de energía. Verifique que se pueda acceder fácilmente al tomacorriente y al enchufe de pared.

5 Turn on the monitor. Then turn on the computer.



Encienda el monitor. Luego encienda el ordenador.

CustoMax for your monitor

version 3.0

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4.4. Image quality controls

4.5. Hardware & Software settings

4.6. User guidance

1. THE CONTENT OF THE PACKAGE

In the package you should find

The USB module

The USB cable

The CD-ROM with the CustoMax software & USB device driver on it

The Directions for use

2. INSTALLATION

System requirements

Hardware : a PC which supports the USB function and has a USB outlet.

Software: Windows system which supports USB (Win 95 2.1 or Win 98).

Installation of USB module

1. Turn off the monitor and unplug the power cord.
2. Remove the cover of "USBAY" at the back of the monitor.
3. Insert USB module into the slot.
4. Fix the USB module to the monitor by screwing.
5. Plug-in the power cord and turn on the monitor.

To establish the USB connection

6. Insert CD-Rom
7. The two ends of USB cable attached are different. Plug-in the square end into the "upstream" outlet of the USB module.
8. Plug-in the other end into the USB outlet of the PC.
9. Windows recognises two new pieces of hardware

- Philips USB hub
- USB Human Interface Device

This last item is presented through a wizard.

Follow the "next" steps on screen (choose the recommended options) until installation has been finished

Usages Tips: Check device manager tab in system manager properties.

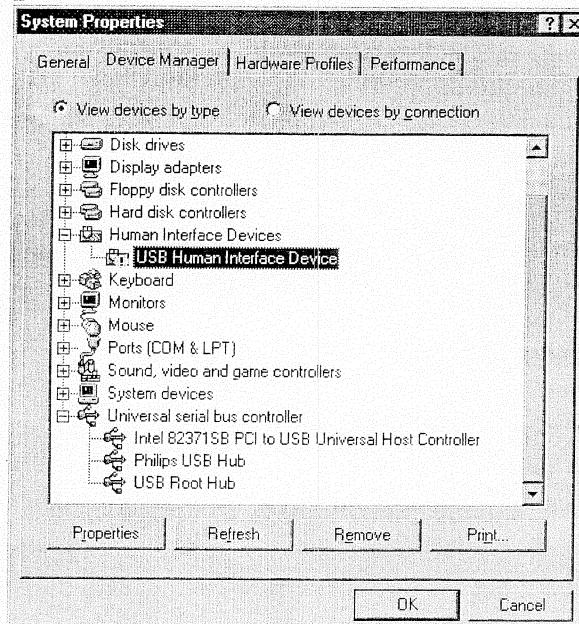
Human Interface devices

- Philips CustoMax (USB monitor control)

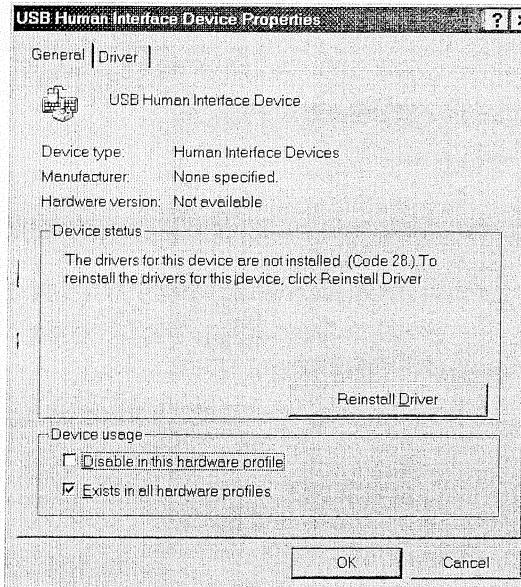
Universal serial bus controller

- Philips USB Hub

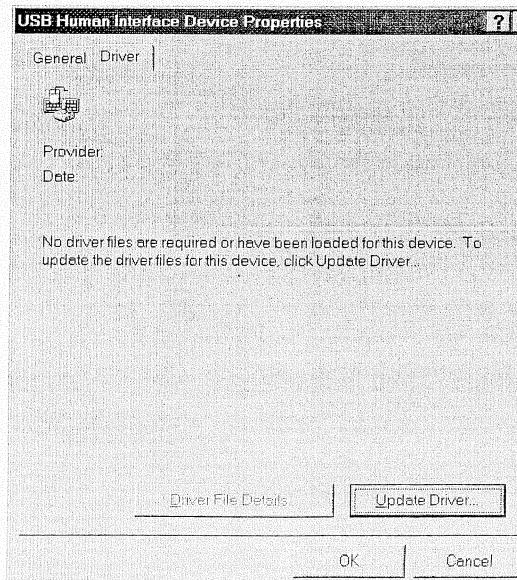
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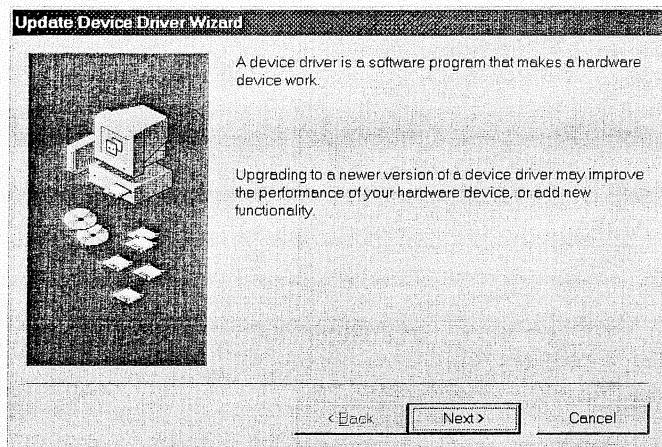
select properties



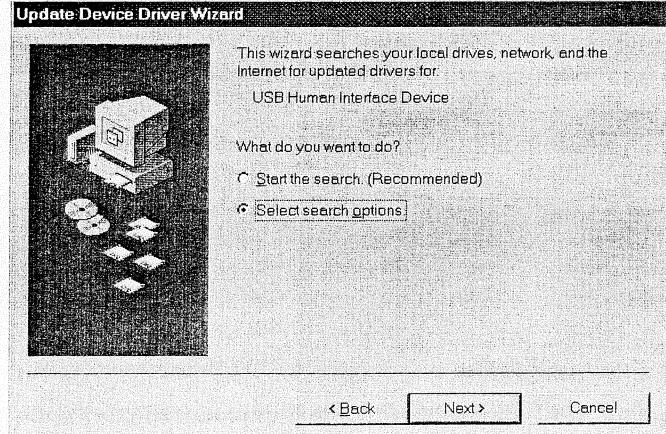
select driver



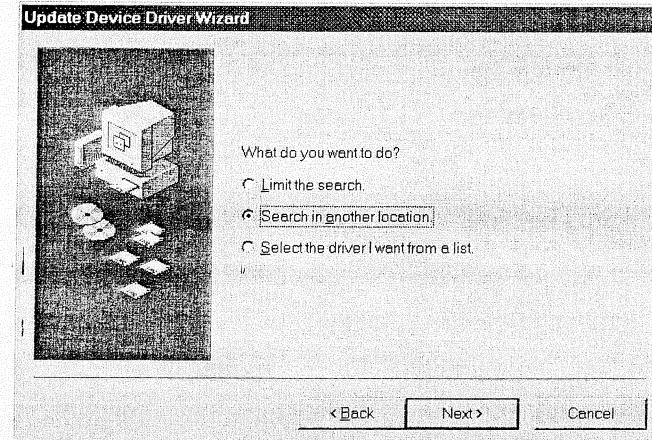
select Update Driver



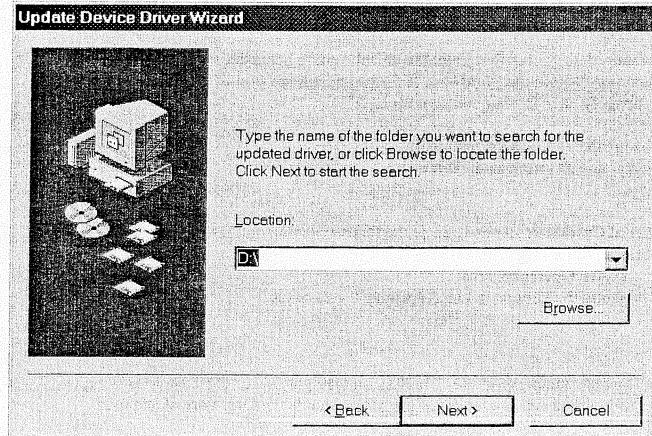
select next



select next



select next



select next

then follow Wizard

Instalation of CustoMax

10. Double click on CD-Rom icon
11. Start the CustoMax installation program: CustoMax 3.exe

CustoMax

Start CustoMax using one of these four ways

1. Icon on the right-side of the taskbar
2. Tab in display properties
3. Start menu
4. ctrl-alt-c

There is no need to turn off the PC or monitor when establish USB connection.

Installation of CustoMax

1. Install the USB module and connect the USB cable between your monitor & PC.
2. Put the CD-ROM in the CD-ROM drive.
3. Click on the CD-ROM icon.
4. Follow the installation instructions on the screen.

Plug-in the desired peripherals into the "downstream" outlets of the USB module.

Usage tips

The shortcut to start-up CustoMax is **ctrl + alt + c**.
 If installed on a network server: the settings will be stored locally.

3. CUSTOMAX 3.0, HOW IT WORKS

CustoMax **3.0** for monitors is a software program for adjusting the audio and video, screen geometry, colour quality, image quality and hardware and software settings through USB. The start-up settings of CustoMax, Window Background and Language can be changed.

Note. When CustoMax is started up for the first time, the default setting being activated will be the 'Hardware & Software Settings'. Within the 'Hardware & Software Settings' you first will have to select the type of monitor you currently have in your configuration.

DefaultEnables you to change the default selected menu
 Usages tip: we recommend sound & vision as default menu.

Main procedures for using CustoMax:

1. To select a specific part of CustoMax, choose one of the four navigation buttons on the left side of the CustoMax window.
2. Select on of the buttons in the 'Operation' area.
3. Perform adjustments by using the buttons in the 'Adjustment' area of the CustoMax window.

Usage tips

To switch off, or on, the 'How to..' Help, select the '?' button, on the right side of the CustoMax window.
 To perform adjustments, the contrast and brightness of the screen should be fairly normal and user controllable.

As soon as you finish the program, a DONE is automatically executed to store all settings. Also, before changing the main menu, a DONE is automatically executed.
This minimizes the amount of times having to press DONE.

4. CUSTOMAX, QUICK OVERVIEW

4.1. SOUND & VISION CONTROL

SOUND & VISION CONTROL

To adjust audio and video levels. The options to adjust are: Mute, Volume, Balance, Bass, Treble, Brightness, and Contrast.

MUTE

To switch off/on the sound.

VOLUME

To change the sound level.

BALANCE

To change the sound balance.

BASS

To change the bass level.

TREBLE

With the 'Treble' function you can change the treble level.

BRIGHTNESS

To change the brightness level.

CONTRAST

To change the contrast level.

CONTRAST PATTERN 1

To help you adjust the contrast level.

CONTRAST PATTERN 2

To help you adjust the contrast level.

ADJUSTMENT BUTTONS

To make adjustments to the audio and video levels.

DONE

To save any changes and selections made before closing and returning to the display of the five main navigation and Help buttons.

UNDO

To undo any changes and selections made in this particular part of CustoMax.

Usage Tips

- ù The Mute, Volume, Balance, Bass, Treble, Brightness, and Contrast buttons appear after Sound & Vision Control has been selected.
- ù With the left mouse button a selected contrast pattern can be toggled to the foreground or background.
- ù The Adjustments Buttons only appear after an audio or video button has been selected.
- ù The Done and Undo buttons appear after one of the five main navigation buttons on the left side of the CustoMax window has been selected.
- ù The Undo function will only be executed after an additional confirmation has been made in the pop-up window.

4.3. COLOUR QUALITY CONTROL

COLOUR QUALITY CONTROL

To adjust the colour temperature.

DEGAUSS

To demagnetise the monitor's screen surface.

FACTORY COLOUR PRESET

To reset the current user-defined colour will back to default. User preset 1 is reset to 9300 K, user preset 2 is reset to 6500 K, and user preset 3 is reset to 5500 K.

FACTORY PRESET 1

To set the colour temperature to 9300 K

FACTORY PRESET 2

To set the colour temperature to 6500 K

FACTORY PRESET 3

To set the colour temperature to 5500 K

USER DEFINABLE PRESETS 1

To change the colour temperature to a user-defined preset.

USER DEFINABLE PRESETS 2

To change the colour temperature to a user-defined preset.

USER DEFINABLE PRESETS 3

To change the colour temperature to a user-defined preset.

RED BACKGROUND COLOUR

To help you adjust the colour balance setting.

GREEN BACKGROUND COLOUR

To help you adjust the colour balance setting.

BLUE BACKGROUND COLOUR

To help you adjust the colour balance setting.

COMBINED BACKGROUND COLOUR

To help you adjust the colour balance setting.

WHITE BACKGROUND COLOUR

To help you adjust the colour balance setting.

COLOUR TRIANGLE

To increase or decrease the proportion of each of the colours Red, Green or Blue.

DONE

To save any changes and selections made before closing and returning to the display of the five main navigation and Help buttons.

UNDO

To undo any changes and selections made in this particular part of CustoMax.

Usage Tips

- ù The Degauss function is available under Screen Geometry Control, Colour Quality Control and Image Quality Control.
- ù The number of available presets depends on the type of monitor you have selected in the Hardware & Software Settings part of CustoMax.
- ù The specific colour temperatures in the three Factory Presets cannot be changed.
- ù Adjustments to the colour temperature settings can only be made after first selecting one of the three user presets.
- ù To undo the reset to factory default, and to change back to the last defined user preset: Press Undo. The Factory Colour Preset function will immediately be executed, but can be changed back to the last defined user preset by selecting Undo.
- ù Move a Draggable Marker in the Colour Triangle, in the Adjustment area of the CustoMax window, to a new position on its axis. Alternatively, drag the central point of the triangle to a new position, or click directly on the new position in the triangle.

HARDWARE & SOFTWARE SETTINGS**HARDWARE & SOFTWARE SETTINGS**

To influence the behaviour of your monitor.

HARDWARE & SOFTWARE SETTINGS

To influence the behaviour of your monitor.

POWER SAVER

To reduce monitor power consumption

START-UP' function

To activate or to select the default Navigation setting at start-up. The options are: 'Sound & Vision', 'Geometry', 'Colour Quality', 'Image Quality', or 'Hard- & Software'.

CUSTOMAX WINDOW BACKGROUND

To select a different CustoMax window background. The options are 'Water', 'Fire', 'Air', 'Earth', 'Glas', 'Leave', 'Flowers', 'Monitor housing', 'PCB', 'Droodle' 'Solid Background 1', 'Solid Background 2'.

LANGUAGE

To change to another language. The options are: 'UK English', 'US English', 'Deutsch', 'Français', 'Italiano' and 'Español'.

MONITOR TYPE

To select the present type of monitor. The options are: '107', '109', and '201B'.

HARDWARE & SOFTWARE SETTINGS DISPLAY

Provides information on the current 'Hardware & Software Settings'

DONE

To save any changes and selections made before closing and returning to the display of the five main navigation and Help buttons.

UNDO

To undo any changes and selections made in this particular part of CustoMax.

Usage Tips

- ù The Power Saver function will be executed after a predetermined period of time, during which the monitor has not been used.
- ù The new Navigation default at Start-up will be executed after you have restarted CustoMax.
- ù The CustoMax Window Background will be changed immediately after a Selection has been made.
- ù The Language will be changed immediately after a Selection has been made.
- ù Options relating to the type of monitor selected will be changed immediately after a Selection has been made.
- ù The displayed information cannot be manipulated in the area of display.

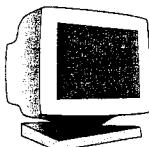


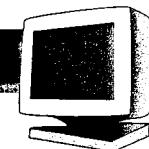
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INTRODUCTION AND SAFETY



Introduction

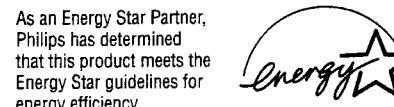
The Philips Brilliance 109 color monitor displays sharp and brilliant images of text and graphics with a maximum resolution of 1600x1200 pixels. It is optimal for Windows, CAD / CAM / CAE, desktop publishing, spread sheets, multi-media, and any other application that demands a large screen size and high resolutions.

The monitor automatically scans horizontal frequencies from 30KHz to 95KHz, and vertical frequencies from 50Hz to 160Hz. With microprocessor-based digital-controlled circuitry and On-Screen Display (OSD) controls, the monitor can automatically adjust itself to the video card's scanning frequency and displays an image with the precise parameters you desire.

Features

- An anti-glare, anti-static, and anti-reflection high-contrast screen coating eliminates any bad effects caused by room light reflecting on and dust attracted to the screen's surface.
- With the Color Adjustment feature, you can easily choose different preset color temperatures or set your own customized color parameters.
- The Image Tilt Adjustment feature corrects a rotated image. This correction minimizes the distortions caused by elements such as the Earth's magnetic field.
- The full-size feature expands the image on the monitor to fill the screen when used in factory preset modes.

Contact us at our web site: <http://www.monitors.be.philips.com>



Safety precautions and maintenance

- Unplug the monitor, if you are not going to use it for an extended period of time.
- Unplug the monitor, if you need to clean it with a slightly damp cloth. Wiping the screen with a dry cloth is okay when the power is off. However, never use alcohol or ammonia-based liquids.
- Consult a service technician if the monitor does not operate normally when following the instructions in this manual.

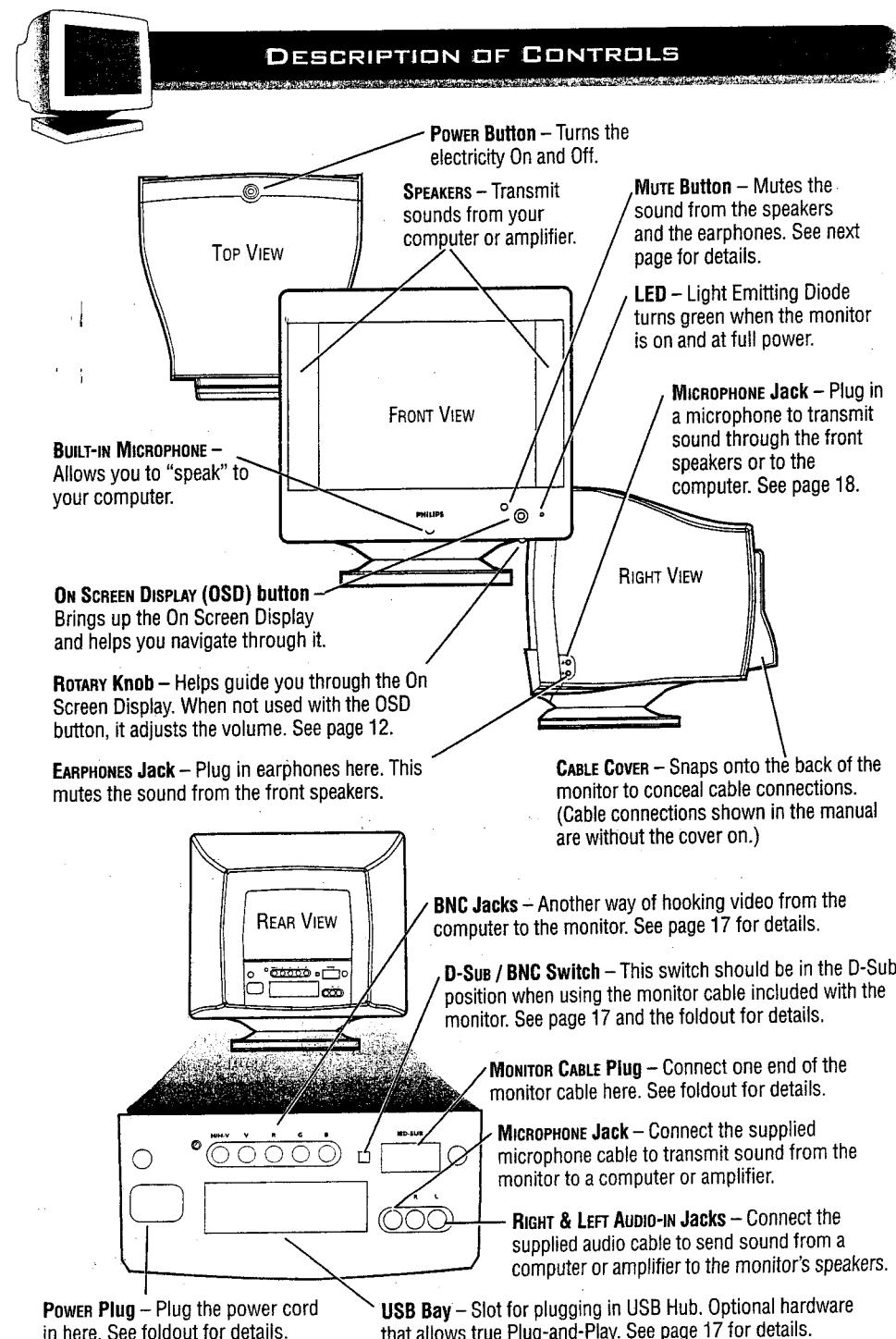
- The back cover should be removed only by qualified service personnel.
- Keep the monitor out of direct sunlight and away from stoves or any other heat source.
- The top of the monitor is not a shelf. Remove any object that could fall into the vents or prevent proper cooling of the monitor's electronics.

ENERGY STAR is a U.S. registered mark.

IBM, IBM PC, and Power PC are registered trademarks of International Business Machines Corporation. Apple, Macintosh, Quadra, Performa, and Centris are registered trademarks of Apple Computer, Inc.

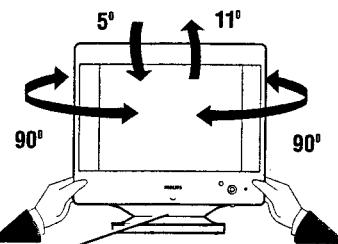
PCS 90 049

DESCRIPTION OF CONTROLS



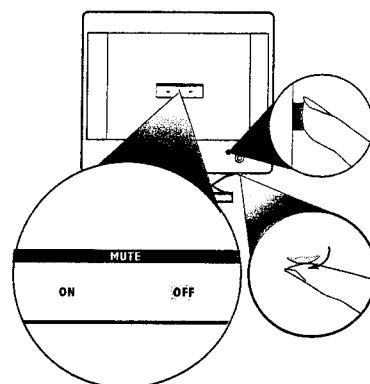
DESCRIPTION OF CONTROLS

PEDESTAL



PEDESTAL – With the built-in pedestal, you can tilt and swivel the monitor to the most comfortable viewing angle. To best use your monitor, always place it at eye level.

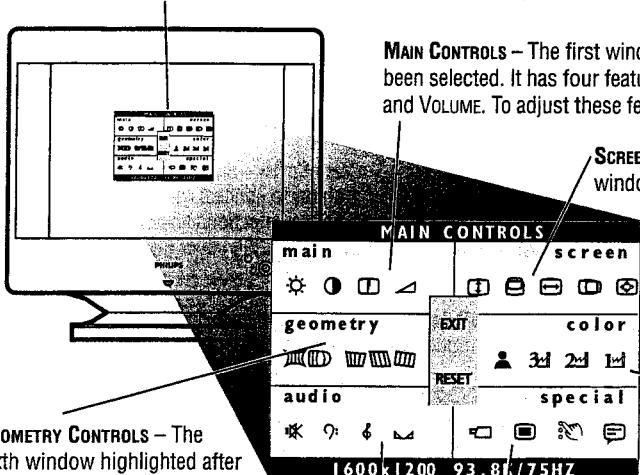
FRONT-PANEL MUTE BUTTON



USING THE FRONT-PANEL MUTE BUTTON

– To turn the mute On and Off, first press the MUTE button. Next, turn the ROTARY knob to highlight either On or Off. Then, press the MUTE button again. *For another way to mute the sound, see page 14.*

ON SCREEN DISPLAY – Your monitor is preset at the factory. However, you can adjust it using the ON SCREEN DISPLAY button and the ROTARY knob described on page 2. The way to do so is through the On Screen Display (OSD). Below is a brief description of the six On Screen Display windows.



GEOMETRY CONTROLS – The sixth window highlighted after the OSD has been selected. It has five features: PINCUSHION, BALANCED PINCUSHION, TRAPEZOID, PARALLELOGRAM, and ROTATION. To adjust these features, turn to page 15.

AUDIO CONTROLS – The fifth window highlighted after the OSD has been selected. It has four features: MUTE, BASS, TREBLE, and BALANCE. To adjust these features, turn to page 14.

MAIN CONTROLS – The first window highlighted after the OSD has been selected. It has four features: BRIGHTNESS, CONTRAST, DEGAUSS, and VOLUME. To adjust these features, turn to pages 4 - 5.

SCREEN SIZE & POSITION – The second window highlighted after the OSD has been selected. It has five features: FULL SIZE, HORIZONTAL POSITION, HORIZONTAL SIZE, VERTICAL POSITION, and VERTICAL SIZE. To adjust these features, turn to pages 6 - 8.

COLOR TEMPERATURE – The third window highlighted after the OSD has been selected. It has four features: CAD/CAM, DTP, PHOTO RETOUCH, and USER PRESETS. To adjust these features, turn to pages 8 - 9.

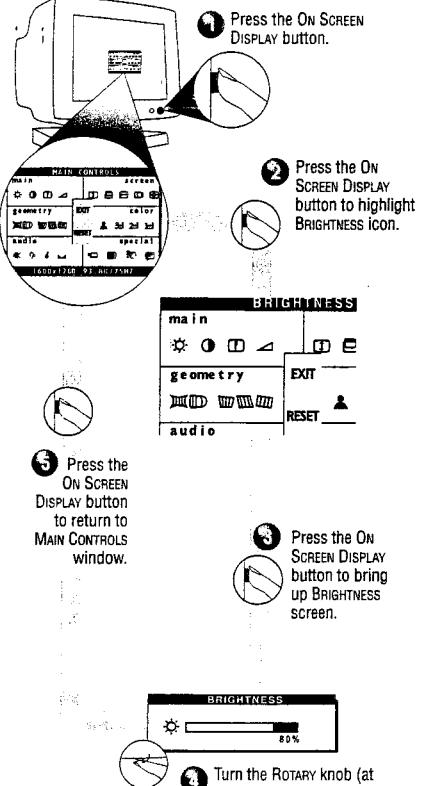
SPECIAL CONTROLS – The fourth window highlighted after the OSD has been selected. It has four features: LANGUAGE, ADVANCED CONTROLS, OSD CONTROLS, and VIDEO INPUT. To adjust these features, turn to pages 10 - 13. *Note: LANGUAGE allows you to change the On Screen Display from English to French, Spanish, German, or Italian. See page 10 for details.*

HOW TO USE THE ON SCREEN DISPLAY (OSD)

MAIN CONTROLS WINDOW

BRIGHTNESS

To adjust your screen's brightness, follow the steps below. Brightness is the overall intensity of the light coming from the screen. A 50% brightness level is recommended.



SMART HELP

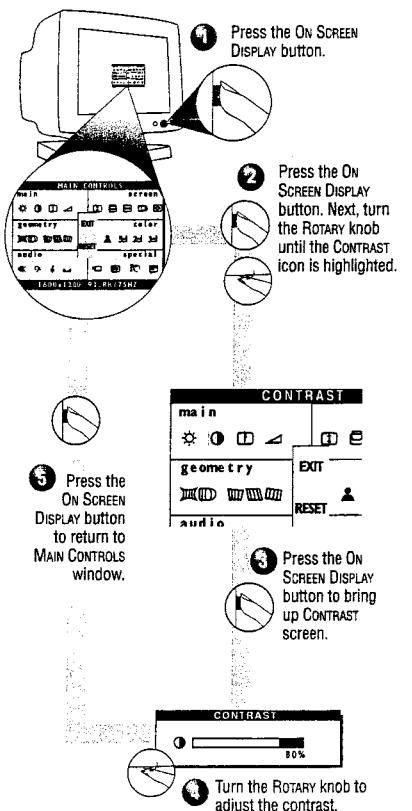
After returning to MAIN CONTROLS ...

... to continue to CONTRAST, turn the ROTARY knob until CONTRAST icon is highlighted. Next, follow steps 3 - 5 under CONTRAST.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

CONTRAST

To adjust your screen's contrast, follow the steps below. Contrast is the difference between the light and dark areas on the screen. A 100% contrast level is recommended.



SMART HELP

After returning to MAIN CONTROLS ...

... to continue to DEGAUSS, turn the ROTARY knob until DEGAUSS icon is highlighted. Next, follow steps 3 - 4 under DEGAUSS (on the next page).

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

HOW TO USE THE ON SCREEN DISPLAY (OSD)

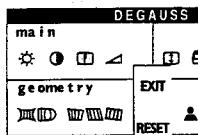
MAIN CONTROLS WINDOW

DEGAUSS

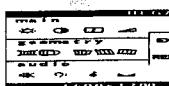
To degauss your screen, follow the steps below. Degaussing removes electromagnetic build up that may distort the color on your screen.



- 1 Press the On Screen Display button.
- 2 Press the On Screen Display button. Next, turn the ROTARY knob until the DEGAUSS icon is highlighted.



For a moment, the screen will be distorted. Then it will return to normal. You will be back at the MAIN CONTROLS window.



- 3 Press the On Screen Display button to degauss your screen.

SMART HELP

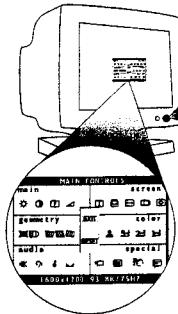
After returning to MAIN CONTROLS ...

... to continue to VOLUME, turn the ROTARY knob until VOLUME icon is highlighted. Next, follow steps 3 - 5 under VOLUME.

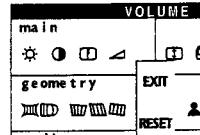
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

VOLUME

To adjust your monitor's volume, follow the steps below. The volume control adjusts the sound from the two front-mounted speakers or the earphones jack.

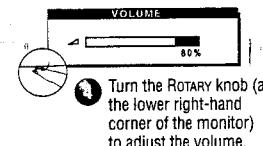


- 1 Press the On Screen Display button.
- 2 Press the On Screen Display button. Next, turn the ROTARY knob until the VOLUME icon is highlighted.



- 3 Press the On Screen Display button to return to MAIN CONTROLS window.

- 3 Press the On Screen Display button to bring up VOLUME screen.



- Turn the ROTARY knob (at the lower right-hand corner of the monitor) to adjust the volume.

SMART HELP

After returning to MAIN CONTROLS ...

... to continue to SCREEN SIZE & POSITION, turn the ROTARY knob until Exit is highlighted. Next, press the OSD button. Turn to the next page and follow steps 2 - 5 under Full Size.

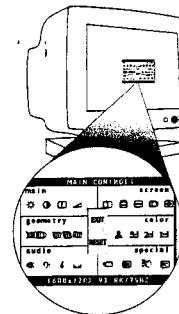
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

HOW TO USE THE ON SCREEN DISPLAY (OSD)

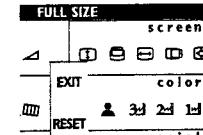
SCREEN SIZE & POSITION WINDOW

FULL SIZE

Full Size allows you to adjust the image on your screen to its maximum height and width. If nothing happens when you use this feature, the image is already at full size. You can use Full Size to both enable and disable this feature. Note: Full Size only works with the monitor's factory presets.

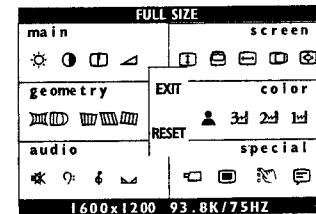


- 1 Press the On Screen Display button.
- 2 Turn the ROTARY knob until the SCREEN SIZE & POSITION window is highlighted. Next, press the On Screen Display button. The Full Size icon is highlighted.



The image will automatically adjust to full size. You can now go on to your next adjustment.

- 3 Press the On Screen Display button.



SMART HELP

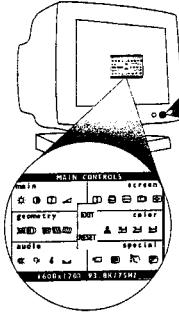
After returning to SCREEN SIZE & POSITION ...

... to continue to HORIZONTAL POSITION, turn the ROTARY knob until Horizontal Position is highlighted. Next, follow steps 3 - 5 under HORIZONTAL POSITION.

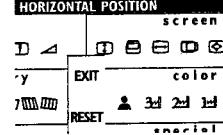
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

HORIZONTAL POSITION

Horizontal Position shifts the image on your screen either to the left or right. Use this feature if your image does not appear centered.

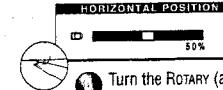


- 1 Press the On Screen Display button.
- 2 Turn the ROTARY knob until the SCREEN SIZE & POSITION window is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until HORIZONTAL POSITION is highlighted.



- 3 Press the On Screen Display button to return to SCREEN SIZE & POSITION.

- 3 Press the On Screen Display button to bring up HORIZONTAL POSITION screen.



- 4 Turn the ROTARY (at the lower right-hand corner of the monitor) knob until the image is horizontally balanced.

SMART HELP

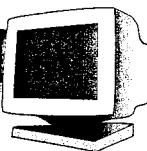
After returning to HORIZONTAL POSITION ...

... to continue to HORIZONTAL SIZE, turn the ROTARY knob until Horizontal Size is highlighted. Next, follow steps 3 - 5 under HORIZONTAL SIZE (on the next page).

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

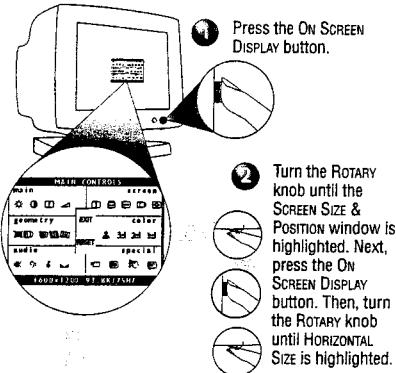
HOW TO USE THE ON SCREEN DISPLAY (OSD)

SCREEN SIZE & POSITION WINDOW

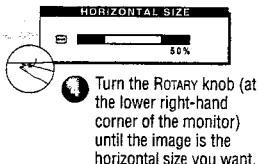


HORIZONTAL SIZE

Horizontal Size expands or contracts the image on your screen, pushing it out toward the left and right sides or pulling it in toward the center.



5 Press the On Screen Display button to return to SCREEN SIZE & POSITION.



Turn the ROTARY knob (at the lower-right-hand corner of the monitor) until the image is the horizontal size you want.

SMART HELP

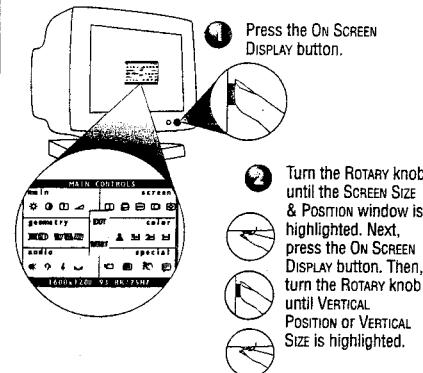
After returning to SCREEN SIZE & POSITION ...

... to continue to VERTICAL POSITION, turn the ROTARY knob until VERTICAL POSITION is highlighted. Next, follow steps 3 - 5 under VERTICAL POSITION.

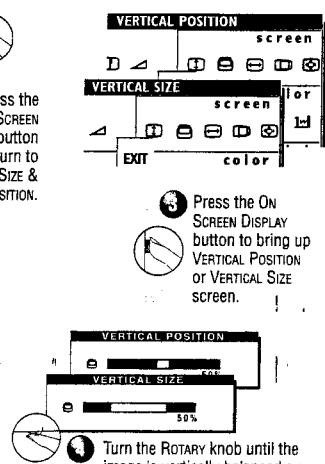
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

VERTICAL POSITION VERTICAL SIZE

Vertical Position adjusts the image on your screen either up or down. Use this feature if your image does not appear centered. Vertical Size expands or contracts the image on your screen, pushing it out toward the top and bottom sides or pulling it in toward the center.



5 Press the On Screen Display button to return to SCREEN SIZE & POSITION.



Turn the ROTARY knob until the image is vertically balanced or the vertical size you want.

SMART HELP

After returning to SCREEN SIZE & POSITION ...

... to continue to GEOMETRY WINDOW, turn the ROTARY knob until EXIT is highlighted. Next, press the OSD button. Then follow steps 2a - 2c under GEOMETRY WINDOW on the next page.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

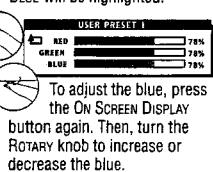
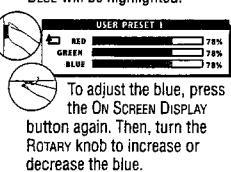
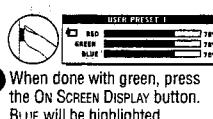
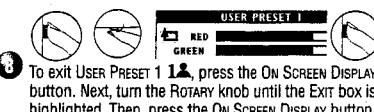
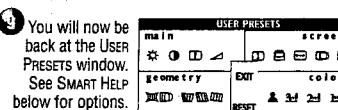
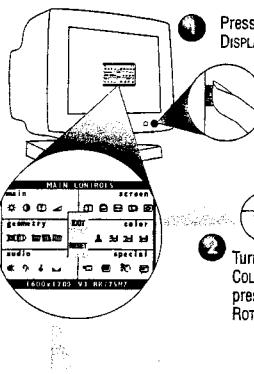
HOW TO USE THE ON SCREEN DISPLAY (OSD)

COLOR TEMPERATURE WINDOW

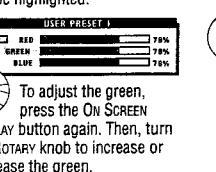
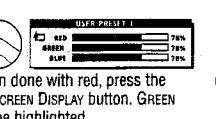
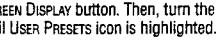
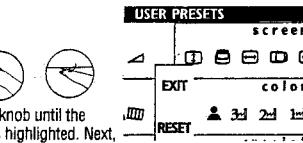


USER PRESETS

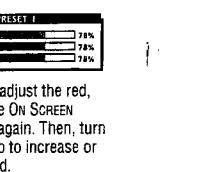
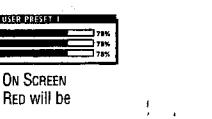
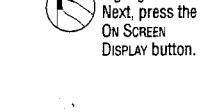
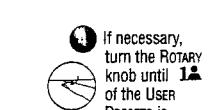
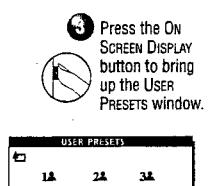
If you need to adjust any of the three preset options (CAD/CAM, DTP, or PHOTO RETOUCH), follow the steps below to modify the colors that appear on your screen. You can make individual adjustments to each of the preset options.



To adjust the blue, press the On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the blue.



To adjust the green, press the On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the green.



Next, to adjust the red, press the On Screen Display button again. Then, turn the ROTARY knob to increase or decrease the red.

SMART HELP

USER PRESETS

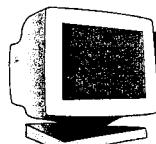
To exit USER PRESETS (step 3 above), turn the ROTARY knob until the Go Back icon is highlighted. Next, press the On Screen Display button. You will be back at the COLOR TEMPERATURE window.

After returning to COLOR TEMPERATURE ...

... to continue to USER PRESET 2 or 3, repeat steps 3 through 8, selecting either USER PRESET 2 or USER PRESET 3.

... to continue to SPECIAL CONTROLS window, turn the ROTARY knob until EXIT is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Now, follow steps 2 - 5 under SPECIAL CONTROLS on the next page.

... to exit the On Screen DISPLAY completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

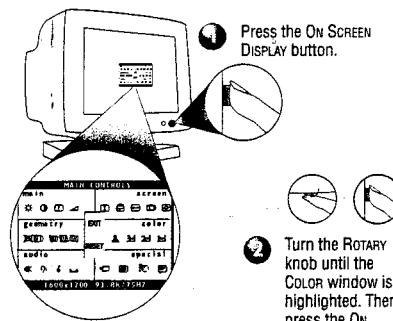


HOW TO USE THE ON SCREEN DISPLAY (OSD)

COLOR TEMPERATURE WINDOW

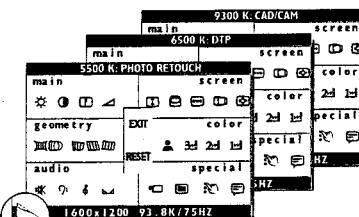
9300 K CAD/CAM / 6500 K DTP /
5500 K PHOTO RETOUCH

1 2 3 Your monitor has three preset options you can choose from. One 1 for Computer Aided Design (CAD) work. Two 2 for Desktop Publishing (DTP). And three 3 for Photo Retouch. When you select an option, the computer automatically adjusts itself for that selection.



After each preset setting is saved, the on screen display automatically returns to the COLOR TEMPERATURE window.

To save the next present setting, simply repeat the steps listed here.



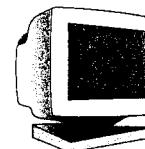
Press the On Screen Display button to bring up and save the preset settings for 9300 K CAD/CAM, 6500 K DTP, or 5500 K Photo Retouch.

SMART HELP

After returning to COLOR TEMPERATURE ...

... to continue to USER PRESETS, turn the ROTARY knob until USER PRESETS is highlighted. Next, follow steps 3 - 9 under USER PRESETS on the next page.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

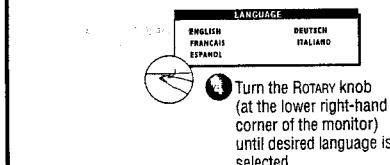
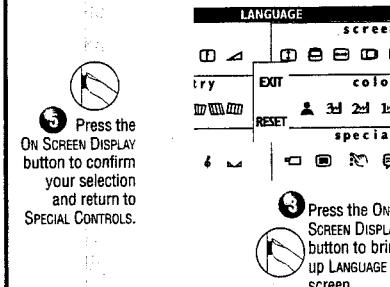
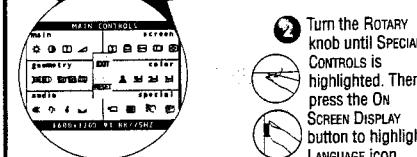


HOW TO USE THE ON SCREEN DISPLAY (OSD)

SPECIAL CONTROLS WINDOW

LANGUAGE

The On Screen Display shows its settings in one of five languages. The default is English, but you can select French, Spanish, German, or Italian.



SMART HELP

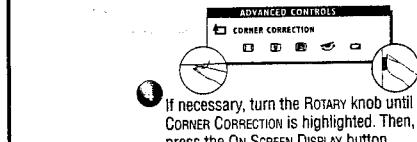
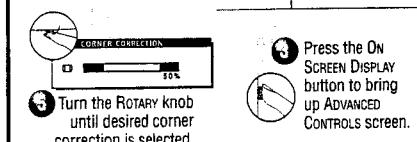
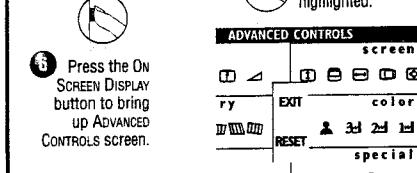
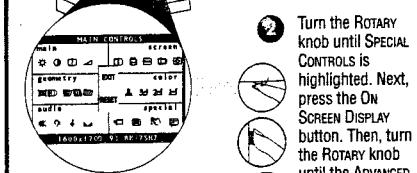
After returning to SPECIAL CONTROLS ...

... to continue to ADVANCED CONTROLS, turn the ROTARY knob until ADVANCED CONTROLS icon is highlighted. Next, follow steps 3 - 6 under ADVANCED CONTROLS.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

ADVANCED CONTROLS CORNER CORRECTION

1 2 3 4 5 ADVANCED CONTROLS is a set of five adjustments. They include CORNER CORRECTION, VERTICAL LINEARITY, MOIRE, ROTARY DEFAULT, and POWER SAVING. CORNER CORRECTION "squares up" the corners of an image on the screen. To adjust your CORNER CORRECTION, follow the steps below.



SMART HELP

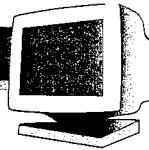
After returning to ADVANCED CONTROLS ...

... to continue to VERTICAL LINEARITY, turn the ROTARY knob until VERTICAL LINEARITY icon is highlighted. Next, follow steps 4 - 6 under VERTICAL LINEARITY (on the next page).

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

HOW TO USE THE ON SCREEN DISPLAY (OSD)

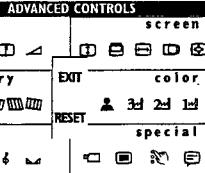
SPECIAL CONTROLS WINDOW



ADVANCED CONTROLS VERTICAL LINEARITY

ADVANCED CONTROLS is a set of five adjustments, including VERTICAL LINEARITY. Linearity is the degree with which the actual location of a pixel on the screen corresponds with its intended location. To adjust your VERTICAL LINEARITY, follow the steps below.

- 1 Press the On SCREEN DISPLAY button.
- 2 Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the On SCREEN DISPLAY button. Then, turn the ROTARY knob until the ADVANCED CONTROLS icon is highlighted.
- 3 Press the On SCREEN DISPLAY button to add your adjustment and to bring up ADVANCED CONTROLS screen.
- 4 Turn the ROTARY knob to adjust the vertical linearity.
- 5 Turn the ROTARY knob to bring up ADVANCED CONTROLS screen.
- 6 Turn the ROTARY knob until VERTICAL LINEARITY is highlighted. Then, press the On SCREEN DISPLAY button.



SMART HELP

After returning to ADVANCED CONTROLS ...

... to continue to Moire, turn the ROTARY knob until Moire icon is highlighted. Next, follow steps 4 - 7 under Moire.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

ADVANCED CONTROLS MOIRE

ADVANCED CONTROLS is a set of five adjustments, including MOIRE. MOIRE is a fringe pattern arising from the interference between two superimposed line patterns. To adjust your MOIRE, follow the steps below. Note: Use only if necessary. By activating MOIRE, sharpness can be affected.

- 1 Press the On SCREEN DISPLAY button.
- 2 Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the On SCREEN DISPLAY button. Then, turn the ROTARY knob until the ADVANCED CONTROLS icon is highlighted.
- 3 Press the On SCREEN DISPLAY button to add your adjustment and to bring up ADVANCED CONTROLS screen. See SMART Help to select VERTICAL MOIRE or turn MOIRE OFF.
- 4 Turn the ROTARY knob to adjust the moire.
- 5 Turn the ROTARY knob until VERTICAL MOIRE is highlighted. Then, press the On SCREEN DISPLAY button.
- 6 Turn the ROTARY knob until HORIZONTAL MOIRE is highlighted. Then, press the On SCREEN DISPLAY button.
- 7 Turn the ROTARY knob until Moire is highlighted. Then, press the On SCREEN DISPLAY button.

SMART HELP

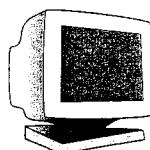
To select VERTICAL MOIRE or to turn Moire off, follow the steps above, selecting VERTICAL MOIRE or Moire OFF in step 5.

After returning to ADVANCED CONTROLS ...

... to continue to ROTARY DEFAULT, turn the ROTARY knob until ROTARY DEFAULT icon is highlighted. Next, follow steps 4 - 6 under ROTARY DEFAULT. ... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

HOW TO USE THE ON SCREEN DISPLAY (OSD)

SPECIAL CONTROLS WINDOW



ADVANCED CONTROLS ROTARY DEFAULT

ROTARY DEFAULT allows you to pick the feature your ROTARY knob will default to when not used in adjusting your On SCREEN DISPLAY. The normal default is volume. To select your ROTARY DEFAULT, follow the steps below.

- 1 Press the On SCREEN DISPLAY button.
- 2 Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the On SCREEN DISPLAY button. Then, turn the ROTARY knob until the ADVANCED CONTROLS icon is highlighted.
- 3 Press the On SCREEN DISPLAY button to add your adjustment and return to ADVANCED CONTROLS.
- 4 Turn the ROTARY knob to select BRIGHTNESS, CONTRAST, or VOLUME.
- 5 Turn the ROTARY knob to select ROTARY DEFAULT.
- 6 Turn the ROTARY knob until ROTARY DEFAULT is highlighted. Then, press the On SCREEN DISPLAY button.

SMART HELP

After returning to ADVANCED CONTROLS ...

... to continue to POWER SAVING, turn the ROTARY knob until POWER SAVING is highlighted. Next, follow steps 3 - 6 under POWER SAVING.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

ADVANCED CONTROLS POWER SAVING

POWER SAVING helps save energy when the monitor is on but not being used. After a preset time, the monitor will go blank if not being used. To select POWER SAVING, follow the steps below.

- 1 Press the On SCREEN DISPLAY button.
- 2 Turn the ROTARY knob until SPECIAL CONTROLS is highlighted. Next, press the On SCREEN DISPLAY button. Then, turn the ROTARY knob until the ADVANCED CONTROLS icon is highlighted.
- 3 Press the On SCREEN DISPLAY button to add your adjustment and return to ADVANCED CONTROLS.
- 4 Turn the ROTARY knob to select POWER SAVING.
- 5 Turn the ROTARY knob to select POWER SAVING ON or OFF.
- 6 Turn the ROTARY knob until POWER SAVING is highlighted. Then, press the On SCREEN DISPLAY button.

SMART HELP

After returning to ADVANCED CONTROLS ...

... to continue to OSD Controls, turn the ROTARY knob until Go Back is highlighted. Next, press the On SCREEN DISPLAY button. Then, the ROTARY knob to OSD Controls and go to the next page.

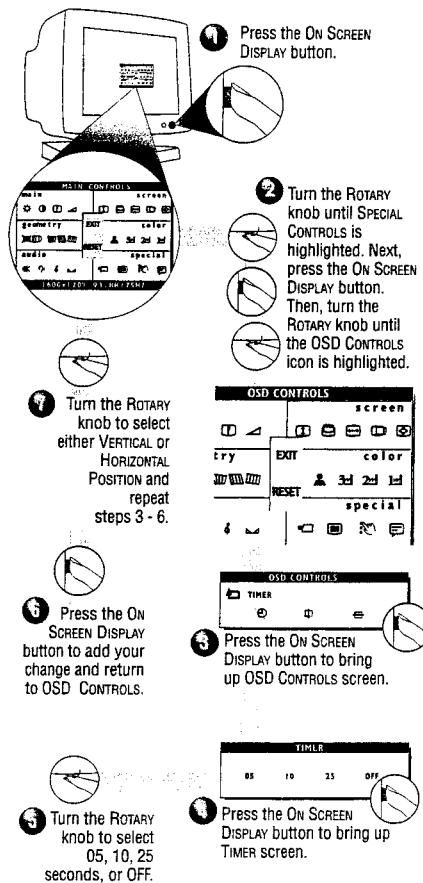
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

HOW TO USE THE ON SCREEN DISPLAY (OSD)

SPECIAL CONTROLS WINDOW

OSD CONTROLS

With OSD CONTROLS, you can set the time for the On Screen Display to time out, and change the vertical and horizontal position of the OSD on the monitor screen.



SMART HELP

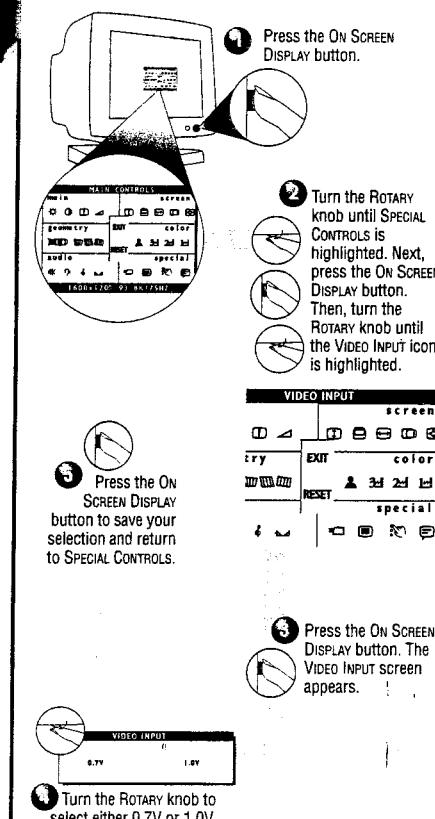
After returning to SPECIAL CONTROLS ...

... to continue to OSD Controls, turn the ROTARY knob until OSD CONTROLS icon is highlighted. Then, follow steps 3 - 6 under OSD CONTROLS.

... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

VIDEO INPUT

VIDEO INPUT helps determine what you see on the screen. It is set at 0.7V(nts), but if the video input signal is different than the output signal, you may want to change it to 1.0V.



SMART HELP

After returning to OSD CONTROLS ...

... to continue to Audio Controls, turn the ROTARY knob until BACK is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob to Audio Controls window and go to the next page.

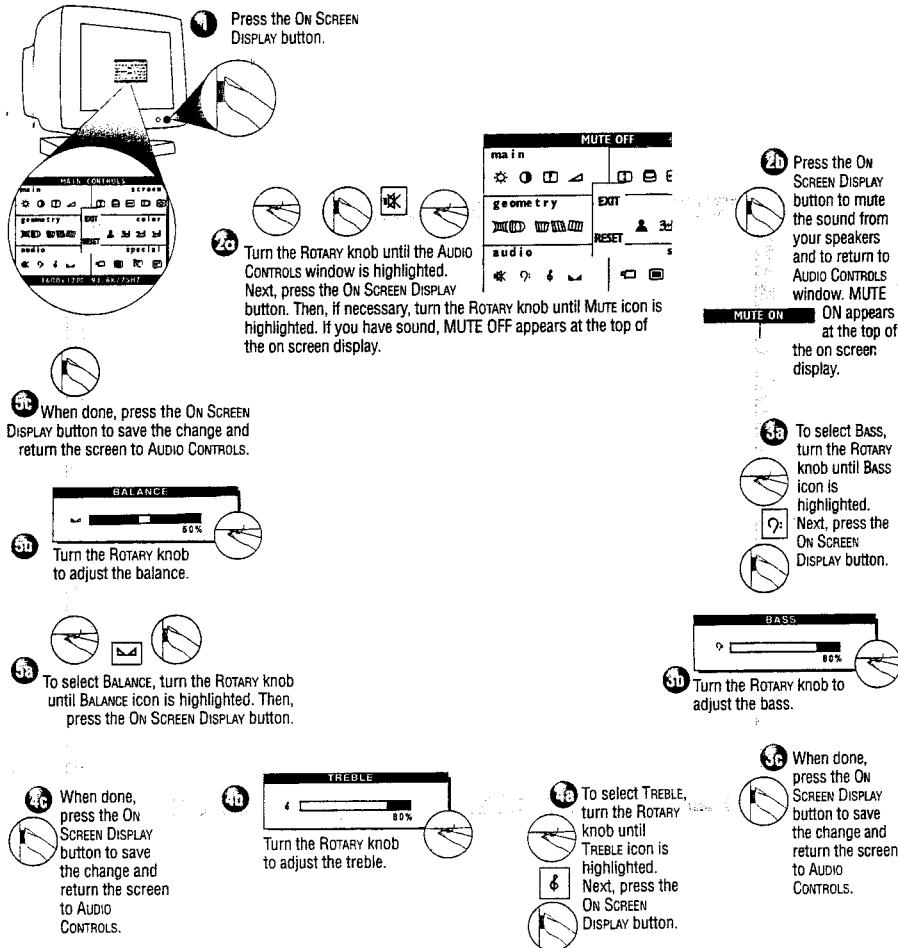
... to exit completely, press the OSD button and hold for two seconds. (See page 16 for other exit options.)

HOW TO USE THE ON SCREEN DISPLAY (OSD)

AUDIO CONTROLS WINDOW

MUTE, BASS, TREBLE, BALANCE

Follow the steps below to modify the sound that comes from your speakers. You can make individual adjustments to each of the preset options (MUTE, BASS, TREBLE, or BALANCE).



SMART HELP

To exit Audio Controls ...

... but continue on to GEOMETRY CONTROLS, turn the ROTARY knob until EXIT is highlighted. Next, press the On Screen Display button. Then go to step 2a on page 15.

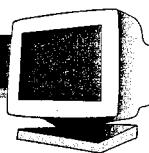
... completely, press the On Screen Display button and hold for two seconds. The On Screen Display will disappear. All changes will be saved.

To cancel Mute, repeat step 2b, or press the Mute button on the front of the monitor.

To make changes to one item, follow the steps for that item. Then follow the instructions To exit Audio Controls

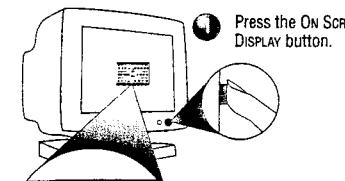
HOW TO USE THE ON SCREEN DISPLAY (OSD)

GEOMETRY CONTROLS WINDOW

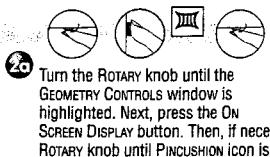


PINCUSHION, BALANCED PINCUSHION, TRAPEZOID, PARALLELOGRAM, ROTATION

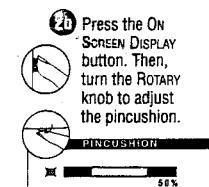
Follow the steps below to adjust any of the five preset options (PINCUSHION, BALANCED PINCUSHION, TRAPEZOID, PARALLELOGRAM, or ROTATION). You can make individual adjustments to each of the preset options. Note: use these features only when the picture is not square.



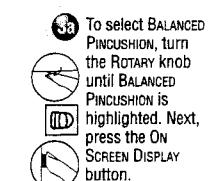
1 Press the On Screen Display button.



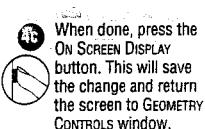
2 Turn the ROTARY knob until the GEOMETRY CONTROLS window is highlighted. Next, press the On Screen Display button. Then, if necessary, turn the ROTARY knob until PINCUSHION icon is highlighted.



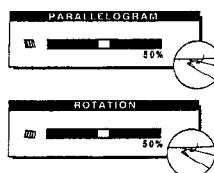
3 When done, press the On Screen Display button to save the change and return to GEOMETRY CONTROLS window.



4a To select PARALLELOGRAM or ROTATION, turn the ROTARY knob until PARALLELOGRAM or ROTATION icon is highlighted. Next, press the On Screen Display button. Then follow steps 4b and 4c to make the appropriate changes.



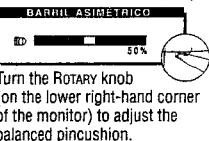
4b When done, press the On Screen Display button. This will save the change and return the screen to GEOMETRY CONTROLS window.



4c Turn the ROTARY knob to adjust the trapezoid.



4d When done, press the On Screen Display button. This will save the change and return the screen to GEOMETRY CONTROLS.



4e Turn the ROTARY knob (on the lower right-hand corner of the monitor) to adjust the balanced pincushion.

SMART HELP

To exit GEOMETRY CONTROLS ...

... but continue to another window, turn the ROTARY knob until Exit is highlighted. Next, press the On Screen Display button. Then, turn the ROTARY knob until that window is highlighted. Now, press the On Screen Display button and follow the instructions for that window.

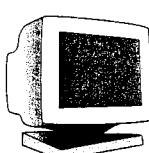
... completely, press the On Screen Display button and hold for two seconds. The On Screen Display will disappear. All changes will be saved.

To make changes to one item, follow the steps for that item. Then, follow "To exit GEOMETRY CONTROLS ...".

To return to factory presets, see "To Reset an Individual Window" on page 16.

HOW TO USE THE ON SCREEN DISPLAY (OSD)

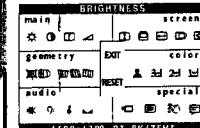
EXIT AND RESET



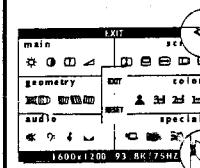
EXIT & RESET FROM A WINDOW

Choosing Exit allows you to go to another window. Choosing Reset returns all the settings in that window to factory presets.

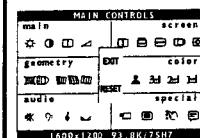
TO EXIT AN INDIVIDUAL WINDOW



1 Make sure you are at a window. For example, MAIN CONTROLS. An icon will be highlighted. For example, BRIGHTNESS.

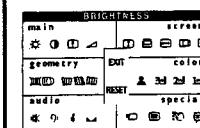


2 Turn the ROTARY knob until Exit is highlighted. Next, press the On Screen Display button.

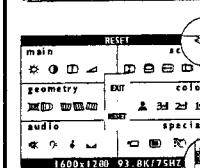


3 An entire window is now highlighted. Turn the ROTARY knob to another window and begin adjustments, or turn the knob until Exit is highlighted as shown in EXIT FROM OSD (at right).

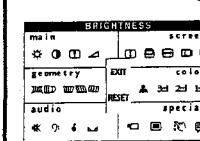
TO RESET AN INDIVIDUAL WINDOW



1 Make sure you are at a window. For example, MAIN CONTROLS. An icon will be highlighted. For example, BRIGHTNESS.



2 Turn the ROTARY knob until Reset is highlighted. Next, press the On Screen Display button.

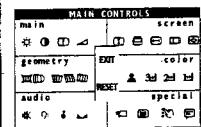


3 The first icon in the reset window is now highlighted. Turn the ROTARY knob to select another icon and begin adjustments, or turn the knob until Exit is highlighted as shown above.

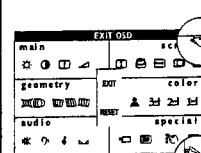
EXIT & RESET FROM THE ON SCREEN DISPLAY

Exiting from the On Screen Display removes the On Screen Display from the monitor screen. Resetting from the On Screen Display returns everything in all the windows to factory presets.

TO EXIT AN ENTIRE ON SCREEN DISPLAY

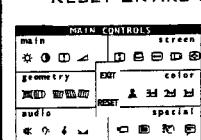


1 Make sure you have exited from all icons in a window. (See To Exit From An Individual Window.) For example, MAIN CONTROLS will be highlighted.

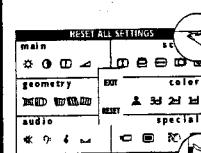


2 Turn the ROTARY knob until Exit is highlighted. Next, press the On Screen Display button. The On Screen Display will disappear.

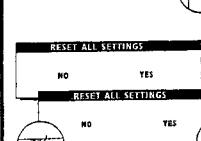
RESET ENTIRE ON SCREEN DISPLAY



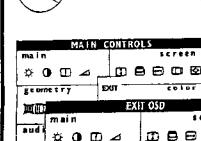
1 Make sure you have exited from all icons in a window. (See To Exit From An Individual Window.) For example, MAIN CONTROLS will be highlighted.



2 Turn the ROTARY knob until Reset is highlighted. Next, press the On Screen Display button.



3 Turn the ROTARY knob to select No or Yes. Then press the On Screen Display button.



4 If No is selected, the On Screen Display appears and MAIN CONTROLS is highlighted.

If Yes is selected, the Exit OSD screen appears.

ADDITIONAL HOOK UP OPTIONS

BNC AND USB SET UPS



BNC CONNECTIONS

BNC is another way to connect the monitor to the computer. This connection requires an optional BNC cable. It can be connected to either a Macintosh- or IBM-compatible computer. For those who work with graphics or designs, this option may be better.

Note: Be sure to flip the D-Sub/BNC switch to BNC when using this connection.

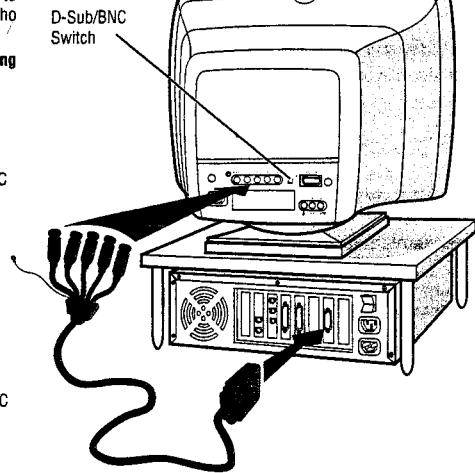
For an IBM-compatible computer:

1. Turn off the computer.
2. Connect the (optional) BNC monitor cable and set D-Sub/BNC switch to BNC.
3. Connect the power cable.
4. Turn on the monitor. Then turn on the computer.
5. If you have Windows '95, follow the "If you have Windows '95" steps on the Setting Up foldout sheet.

For a Macintosh-type computer:

1. Connect the Mac adapter to one end of the monitor cable.
2. Turn off the computer.
3. Connect the (optional) BNC monitor cable and set D-Sub/BNC switch to BNC.
4. Connect the power cable.
5. Turn on the monitor. Then turn on the computer.

Refer to the "Setting Up your Philips monitor" foldout for a more detailed guide to setting up your monitor.



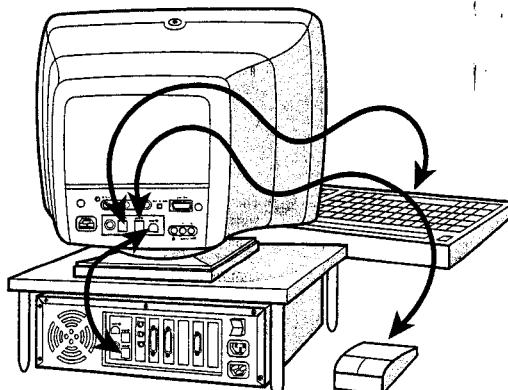
USB CONNECTIONS

USB (Universal Serial Bus) is an innovation in connecting your IBM-compatible computer to your monitor. By using the USB, you will be able to connect your keyboard, mouse, printer, and other peripherals to your monitor instead of having to connect them to your computer. This will give you greater flexibility in setting up your system. Plus, you will have true plug-and-play capability. While the software is still being developed, Philips has included the hardware so you will be ready to take advantage of this next generation in computer development.

For an IBM-compatible Computer:

1. Turn off the computer.
2. Connect the (optional) USB Hub and cable to the computer and to the monitor. (Computer must have USB port.)
3. Connect the power cable.
4. Turn on the monitor. Then turn on the computer.
5. With the installation of the correct software, you will be able to connect specially-made peripherals to the monitor.

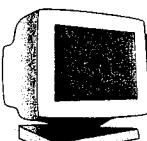
Note: USB Hub and cables sold separately. USB Bay exists in back of monitor.



Refer to the "Setting Up your Philips monitor" foldout for a more detailed guide to setting up your monitor.

ADDITIONAL INFORMATION

AUDIO HOOK UPS AND POWER SAVING FEATURE

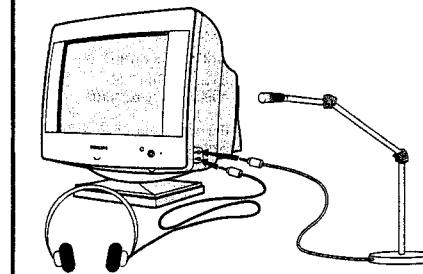


MICROPHONE AND EARPHONES JACKS

In addition to built-in speakers and microphone, you can connect this monitor to optional earphones and a microphone. The jacks are on the right side of the monitor.

To use the microphone with your computer or an amplifier, make the connections shown below.

Note: When the earphones are plugged in, there will be no sound from the built-in speakers.



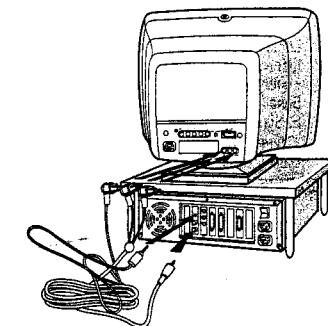
Refer to the owner's manuals included with your earphones and microphone for a detailed guide to setting up these items.

MICROPHONE AND AUDIO-IN JACKS

A microphone jack is on the back of the monitor. Use it and the supplied cable to connect your monitor to your computer or an amplifier (if either has the right type of jack).

On the back of this monitor there is also one set of left and right audio-in jacks. Use them and the supplied cable to connect your monitor to your computer or an amplifier (if either has the right type of jacks).

See page 2 for more detailed illustrations of the jacks' locations.



AUTOMATIC POWER SAVINGS & PRESET RESOLUTION MODES

If you have VESA's DPMS compliance display card or software installed in your PC, the monitor can automatically reduce its power consumption when not in use. If input from a keyboard, mouse, or other device is detected, the monitor automatically "wakes up." The table at left shows the power consumption and signalling of this automatic power-saving feature. To turn this feature on and off, see page 12. The table at right shows the 12 factory preset resolution modes. The maximum number of modes is 16. This leaves room for additions.

Power Management Definition						
VESA's mode	Video	H-sync	V-sync	Power used	Power saving(%)	LED color
ON	Active	Yes	Yes	<130W	0%	Green
Stand-by	Blanked	No	Yes	<15W	87.5%	Yellow
Suspend	Blanked	Yes	No	<15W	87.5%	Yellow
OFF	Blanked	No	No	< 5W	95.8%	Amber

This monitor is Energy Star compliant and power management compatible.



AS AN ENERGY STAR PARTNER, PHILIPS HAS DETERMINED THAT THIS PRODUCT MEETS THE ENERGY STAR GUIDELINES FOR ENERGY EFFICIENCY.

The proper operation of the function requires a computer with VESA DPMS power management capabilities. When used with a computer equipped with VESA DPMS, the monitor is Energy Star compliant.

MODE	RESOLUTION	H. FREQ. (KHz)	V. FREQ. (Hz)	STANDARD
1	640 x 400	31.5	70	VGA
2	640 x 480	31.5	60	VGA
3	640 x 480	37.5	75	VESA/75
4	800 x 600	46.9	75	VESA/75
5	800 x 600	53.7	85	VESA/85
6	1024 x 768	60	75	VESA/75
7	1024 x 768	68.6	85	VESA/85
8	1152 x 870	69.0	75	MAC
9	1152 x 900	71.8	76	SUN SPARC
10	1280 x 1024	80.0	75	VESA/75
11	1280 x 1024	91.0	85	VESA/85
12	1600 x 1200	93.8	75	VESA/75

ADDITIONAL INFORMATION

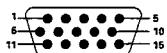
COMING TO TERMS WITH THIS BOOK



PIN ASSIGNMENT

The 15-pin D-sub connector (male) of the signal cable:

Pin No.	Assignment
1	Red video input
2	Green video input
3	Blue video input
4	Identical output - connected to pin 10
5	Self test
6	Red video ground
7	Green video ground
8	Blue video ground
9	No pin
10	Logic ground
11	Identical output - connected to pin 10
12	Serial data line (SDA)
13	H. Sync / H+V
14	V. Sync (VCLK for DDC)
15	Data clock line (SCL)



SPECIFICATIONS

GENERAL

CRT

Screen size	:19" (43.2 cm) flat & square
Viewable Image Size (VIS)	:17.9"
Focusing method	:Dynamic focus
Dot pitch	:0.22 mm (horizontal)
Phosphor	:P22 or equivalent, medium short persistence
Screen treatment	:Arasc

Display area

Factory preset	:340 mm (H) x 255 mm (V)
Maximum usable	:364 mm (H) x 272.5 mm (V)

Scanning frequency

Horizontal (line)	:30-95kHz (AutoScan)
Vertical (frame)	:50-160 Hz (AutoScan)

Input power

Power consumption	:100-240 VAC, 50-60 Hz
Thermal dissipation	:120 Watt normal, 130 Watt max.

Input signal

Video	:0.7 or 1.0 Vpp, 75 Ohm impedance
Sync	:Separate sync, TTL level Composite sync, TTL level

Pedestal

Tilt	:5° forward, 11° backward
Swivel	:90° left, 90° right

Physical

Unit dimension (WxHxD)	:485 x 490 x 515 mm (19.1" x 19.3" x 20.3")
Net weight	:24.5 kg (53.9 lbs.)

Operating conditions

Temperature	:0° C - 40° C
Humidity	:10% - 90%

Storage conditions

Temperature	:40° C - 60° C
Humidity	:5% - 95%

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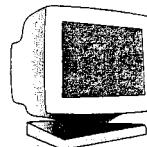
GLOSSARY

Here are a few definitions that may help you.

Degauss	The process by which metal parts of the monitor are demagnetized in order to reduce screen distortion and color impurity.
D-Sub/BNC	Two ways of connecting your monitor to your computer. Your monitor comes with a D-Sub cable. For work with a heavy emphasis on graphics, a BNC cable is recommended.
Geometry	A set of controls that allows you to adjust the alignment of the picture on the monitor screen. The goal is to "square up" the picture. This is done by adjusting such items as balanced pincushion, pincushion, parallelogram, rotation, and trapezoid.
Moire	A fringe pattern caused by the interference between two superimposed line patterns.
USB	Universal Serial Bus. A way to connect your computer, monitor, and peripherals for true Plug-and-Play functions.

ADDITIONAL INFORMATION

WHAT TO DO IF SOMETHING ISN'T WORKING



TROUBLESHOOTING

Having trouble? Something not working? Before calling for help, try these suggestions.

HAVING THIS PROBLEM?

No Picture
(Power LED not lit)

CHECK THESE ITEMS

Make sure the Power cable is plugged in the wall and back of the monitor.
Power button on top of the monitor should be in the ON position.
Disconnect the monitor from the power outlet for about one minute.

No Picture
(Power LED is Amber or Yellow in color)

Make sure the computer is turned on.
Make sure the D-Sub/BNC switch on the rear of the monitor is in the correct position. See pages 2 and 17.
Make sure the monitor cable is properly connected to your computer.

No Picture
(Power LED is Green in color)

Make the Brightness and Contrast controls are set correctly. See page 4 for details.
Make sure the D-Sub/BNC switch on the rear of the monitor is in the correct position. See pages 2 and 17.
Make sure the monitor cable is properly connected to your computer.
Check to see if the monitor cable has bent pins.
Make sure the computer Power button is on.

Screen says



when you turn on the monitor.

No Color

If you are using a non-VESA-DDC standard video card, consult your local Philips dealer or service organization to obtain an adapter.

Color appears blotchy

The picture may need degaussing. See page 5 for details.
Remove any nearby magnetic objects.

Face the monitor East for best picture quality.

Missing one or more colors

Check user settings of Color Temperature. See pages 8 and 9 for details.
Make sure the monitor cable is properly connected to your computer.

Check to see if the monitor cable has bent pins.

Dim Picture

Adjust the Brightness and Contrast controls. See page 4 for details.
Check the Video Input selection and switch from 0.7 volts to 1.0 volts or 0.7 volts. See page 13.
Check your video card and the manual instructions for it. It may be a non-VESA-DDC Standard card.

Picture is too large or too small

Adjust the Horizontal and/or Vertical Size. See pages 7 and 8 for details.

Edges of the picture are not square

The geometry controls require adjusting. See page 15 for details.

Picture has a double image

Eliminate the use of a video extension cable and/or video switch box.
Face the monitor East for best picture quality.

Picture is not sharp

Check to make sure Moire is switched off. See page 11.

No Audio

Make sure mute is not activated. See pages 2 and 14 for details.
Rotary Default may be set to Brightness or Contrast. See page 12 for details.
Make sure the Right & Left Audio in cable is securely plugged into the monitor and the audio source.
See pages 2 and 18 for details.

Unstable Picture

Increase your refresh rate. Consult your computer manual for details.

Windows '95 cannot find your video card

Select "Super VGA" under STANDARD DISPLAY TYPES, or contact your video card manufacturer for the right drivers.